AP - 65

STAGE 1 & 2 REPORTS

DATE:

Nov. 4, 2002

RICE Operating Company
122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

November 4, 2002

Trent Stradley
P. O. Box 549
Hobbs, NM 88241

RE: EME SWD Facility M-9 Upgrade
SW/4 SW/4, Section 9-T20S-R37E
Lea County, NM

Dear Mr. Stradley,

Rice Operating Company (ROC) has completed the upgrade on the EME SWD M-9 facility. We appreciate the opportunity to work with you to complete this project. It is our goal to keep you informed of situations that arise during routine operations concerning the land that we lease for facilities.

I am attaching a copy of the Closure Report we sent to the NMOCD for approval.

Again, we appreciate working with you on this project. If you have any questions, comments or concerns, please feel free to call.

Sincerely,

Donnie Anderson
Project Leader-Environmental

Cc: CDH, files
Enclosures: M-9 Closure Report

RICE *Operating Company*

122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. 7002 0510 0000 9384 5877

November 4, 2002

Mr. Wayne Price
NM Energy, Minerals, and Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, NM 87505

RE: REDWOOD TANK CLOSURE REPORT FOR EME SWD FACILITY M-9
Letter M, Sec. 9, T20S, R37E
Lea County, New Mexico
NMOCD Case # 1R0331

Mr. Price:

Rice Operating Company (ROC) petitions the NMOCD for closure of the excavation portion of the below grade redwood tanks site at the Eumont Monument Eunice (EME) Salt Water Disposal Facility SWD Well M-9, located in Unit Letter M, Sec 9, T20S, R37E, Lea County, NM.

ROC is the service provider (operator) for the EME Salt Water Disposal System and has no ownership of any portion of the pipeline, well or facility. The EME System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Closure projects require System Partner AFE approval and work begins as funds are received. The System Partners approved the Closure Project for the SWD M-9 Facility and work was started in January 2002.

The final excavation of the redwood tanks site resulted in TPH and BTEX levels at bottom and sides that are below the recommended guidelines for vadose zone impact when a Total Ranking Score is 20. Groundwater in this area is 18 feet bgs. The sampling results are attached. All closure samples were verified by a certified lab.

This facility is located on Fee Land owned by SW Cattle Company. The 2 acre site lease agreement has been in effect since 1989 and will continue until 2009.

ROC proposes to install a monitor well at this site to monitor groundwater constituents. The proposal includes sampling the groundwater for two years and testing for major cations and anions as well as BTEX. ROC will submit an annual report on the sampling results to the NMOCD by the first of March of the subsequent year. Three samples were taken from the sacrificed monitor well at this site in 2002. The results averaged 360 ppm chlorides and 1523 ppm TDS, with BTEX levels under NMOCD guidelines. Foreseeable future use of the groundwater in this area is limited to agriculture, including livestock watering.

ROC is applying for closure of the excavation at the M-9 Facility and is submitting the Excavation Closure Report and supplemental collected data. Thank you for your consideration of this closure request.

If you have any questions, please call.

RICE OPERATING COMPANY

Donnie Anderson
Project Leader – Environmental

Enclosures Excavation Closure Report M-9 SWD Facility

Cc: CDH,file, Mr. Chris Williams
NMOCD, district 1 Office
1625 French Drive
Hobbs, NM 88240

Trent Stradley
SW Cattle Company
P.O. Box 549
Hobbs, NM 88240

RICE Operating Company

EME M-9 SWD Facility

Excavation Closure Report

122 W. Taylor
Hobbs, NM 88240
505-393-9174

RICE *Operating Company*

Executive Summary
M-9 SWD
Remediation Project

Location
The Eunice Monument Eumont (EME) M-9 SWD Facility is situated approximately 3 miles south of Monument, New Mexico. The legal description of the site is Unit Letter M, Section 9, T20S, R37E. Maps and driving instructions to the site are enclosed.

Site History
The site is used as a flow-through collection and injection facility for salt-water disposal of the EME Salt Water Disposal System. The facility used two 28' diameter below-grade redwood tanks as flow-through collection vessels. These tanks were replaced with two above-ground 500 bbl tanks and a 500 bbl overflow tank. There was not an emergency over-flow pit at this site because any excess water was automatically diverted to SWD Well H-20.

The SWD Well M-9 is located at this site. This facility is an active disposal facility. A map of the facility is included in this report.

Land Use
The facility is located on Fee Land owned by SW Cattle Company. The 2 acre site lease agreement has been in effect since 1989 and will continue until 2009. The primary use of this land is oil and gas production. The topography is unremarkable.

Distance to Surface and Ground Water
There are no domestic water wells within 200' of the facility. There is an abandoned well located approximately 150' east of the facility. The vertical distance to groundwater at this site is 18' bgs.

Tank Area Site Investigation
The tank area was initially delineated using soil borings. Soil samples were collected and analyzed in the field for the presence and concentrations of hydrocarbons and chlorides from surface to 20' bgs. The results of these tests and the boring logs are included in this report.

The borings indicated ground water might be impacted. A monitor well was installed down-gradient of the impacted area. Samples from the well found chloride levels above the WQCC standard, but no BTEX was present. The NMOCD was informed of the groundwater impact in May 2002.

Tanks Area Remediation

Excavation of the tank area began in June, 2002 after the construction of the new facility was completed. Impact under the tanks reached to groundwater at 18' bgs. Impacted soil was excavated to groundwater and land-farmed onsite. A small amount of oil found on the water was skimmed and placed in one of the fiberglass flow-through tanks. Larry Johnson and Paul Sheeley of the Hobbs NMOCD district office visited the location during excavation and sampling. Bottom and wall composites were taken and sent to a certified lab for verification. Closure sample results of the bottom and wall composites were below NMOCD guidelines. Clean soil was used to backfill to 16' bgs in order to support and allow consistent clay compaction integrity. A 12" compacted redbed clay liner was installed at 16' bgs and tested to insure compaction values approved by NMOCD. This clay liner will segregate and protect the groundwater capillary fringe.

The land-farmed, remediated soil was used to backfill the excavation and packed in 3' lifts. Each lift was field tested for chlorides. The results are enclosed. The site was contoured to ensure rainfall drainage away from the area above the clay liner.

During excavation the monitor well was sacrificed. A replacement well will be installed to monitor the ground water constituents for 2 years to insure no detriment to groundwater quality.

District I
1625 N. French Drive, Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Submit 1 copy to Appropriate District Office and 1 copy to Santa Fe Office

PIT REMEDIATION AND CLOSURE REPORT

Operator: RICE OPERATING COMPANY Telephone: 505-393-9174

Address: 122 West Taylor, Hobbs, NM 88240

Facility or: EME SWD WELL M-9 FACILITY
Well Name

Location: Unit or Qtr/Qtr Sec Unit Letter M Sec 9 T 20S R 37E County LEA

Pit type: Separator _____ Dehydrator _____ Other Below Grade Redwood Tanks

Land Type: BLM _____ State _____ Fee X Other _____

Pit Location Pit Dimensions: length _____ width 28' depth 8'
(Attach diagram)

Reference: wellhead _____ other _____

Footage from reference: see diagram in report

Direction from reference: _____ Degrees _____ East North _____
of
_____ West South _____

Depth to Ground Water (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	20
Wellhead Protection Area (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes No	(20 points) (0 points)	20
Distance to Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet 200 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points)	0
		RANKING SCORE (TOTAL POINTS):	40

Date Remediation Started: June 19,2002 Date Completed: September 9,2002

Remediation Method: (Check all appropriate sections)
Excavation yes Approx. cubic yards 8000 excavated
Landfarmed 8000 cu yds In-situ Bioremediation no
Other

Remediation Location: (ie.: landfarmed onsite, name and location of offsite facility)
Onsite Yes Offsite

General Description of Remedial Action: Excavated redwood tanks area to below OCD guidelines. Removed all TPH impacted soil. Backfilled with blended landfarmed soil, installed and tested clay liner,and contoured to surrounding terrain. A new monitor well will be installed in October.

***Facility site completion date was September 9, 2002.**

Ground Water Encountered: No Yes XX Depth 18' BGS

Final Pit Closure Sampling (if multiple samples, attach sample results and diagram of sample locations and depths)
Sample location Composite samples of sidewalls, bottom and lifts.
Analyticals, CoC, etc. are included in this closure package.
Sample depth Bottom: 20' feet BGS
Sample date Sample time

Sample Results
Benzene (ppm) See report analytical results
Total BTEX (ppm) See report analytical results
Field headspace (ppm)
TPH See report analytical results

Ground Water Sample: Yes XX No (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE September 27, 2002 PRINTED NAME Donnie Anderson

SIGNATURE TITLE Project Leader-Environmental

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised March 25, 1999

WELL API NO.
30-025-12801

5. Indicate Type of Lease
STATE ☐ FEE X

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
Oil Well ☐ Gas Well ☐ Other SWD Well

7. Lease Name or Unit Agreement Name:
Eunice Monument Eumont (EME)

2. Name of Operator
RICE OPERATING COMPANY

8. Well No.
M-9

3. Address of Operator
122 W. TAYLOR, HOBBS, NM 88240

9. Pool name or Wildcat
SAN ANDRES

4. Well Location
Unit Letter 100 feet from the SOUTH line and 250 feet from the WEST line

Section 9 Township 20S Range 37E NMPM LEA County

10. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3525' GL; 3537' KB

11. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPLETION	☐	CASING TEST AND CEMENT JOB	☐		
OTHER:			☐	OTHER: Remediate Below-grade Redwood Tanks			■

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompilation.

ROC began remediation activity on June 19, 2002; excavated approximately 8000 cubic yards of soil and land farmed on site. Impacted soil was removed to 20' bgs, ground water was found at 18' bgs. Installed and tested compacted clay liner. Backfilled with remediated soil and contoured to surrounding terrain. The work was completed on September 9, 2002.

A monitor well, installed in April, 2002 was sacrificed due to the extent of the excavation. Another monitor well is scheduled for installation in October, 2002.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE D. E. Anderson TITLE Project Leader-Environmental DATE 10/12/02

Type or print name D. E. Anderson Telephone No. 505-393-9174

(This space for State use)

APPPROVED BY _____ TITLE _____ DATE _____

Conditions of approval, if any:

RICE Operating Company

122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. 7099 3220 0001 9928 4560

July 26, 2001

Mr. Wayne Price
NM Energy, Minerals, and Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, NM 87504

RE: REDWOOD TANK REPLACEMENT/CLOSURE PLAN FOR EME SWD SITE M-9
Unit Letter M, Sec. 9, T20S, R37E NMPM
Lea County, NM

Dear Mr. Price:

Rice Operating Company (ROC) takes this opportunity to submit the replacement/closure plan for the below-grade redwood tanks at the Eunice-Monument-Eumont (EME) Salt Water Disposal Well M-9, located in Unit M, Sec. 9, T20S, R37E, Lea County, NM. This facility is located on Fee Land owned by the S & W Cattle Company.

ROC is the service provider (operator) for the EME Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The EME System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Replacement/closure projects of this magnitude require System Partner AFE approval and work begins as funds are received.

The Project AFE for the SWD M-9 Facility has been approved by the System Partners and work will commence in September 2001.

The EME SWD Well M-9 facility is included in the ROC generic closure plan for emergency pits and below-grade redwood tanks and is the ninth ROC-operated facility to apply under the generic plan. The EME SWD System will replace the below-grade redwood tanks with above-ground, fiberglass tanks (including an emergency overflow tank) set within secondary containment (poly-liner). There is no emergency overflow pit at this facility. ROC expects to close the tank area pursuant to NMOCD guidelines and the ROC generic work plan for below-

grade redwood tanks. The enclosed C-103 form addresses this intention and defines the site-specific assessment for OCD guidelines. Supporting documentation is also enclosed.

A temporary tank system will be installed at this site, and some of the disposal fluid will be diverted to an alternate disposal facility. The below-grade redwood tanks will be cleaned, dismantled and removed. The tank materials will be properly disposed at an approved oilfield waste facility and documentation will be included in the Final Closure Report.

ROC will schedule all major events with a 48-hour advance notice to the NMOCD. The Final Closure Report will follow at the end of the project.

Thank you for your consideration of this below grade redwood tank closure plan.

RICE OPERATING COMPANY

Carolyn Doran Haynes

Carolyn Doran Haynes
Operations Engineer

Enclosures
cc: LBG, DA, file

Mr. Chris Williams
NMOCD, District I Office
1625 N. French Drive
Hobbs, NM 88240

S & W Cattle Company
P. O. Box 1800
Hobbs, NM 88241

RICE Operating Company
122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. Z 577 009 529

February 23, 2000

Mr. Wayne Price
NM Energy, Minerals and Natural Resources Department
Oil Conservation Division, Environmental Bureau
2040 S. Pacheco
Santa Fe, NM 87505

Re: Revision: Generic Closure Plan for Existing Pits and Below-Grade Redwood Tanks

Mr. Price:

As discussed in our telephone conversation February 22, Rice Operating Company (ROC) is submitting a further revision of the generic work plan for closing redwood tanks and emergency overflow pits that are presently inventoried in the ROC-operated SWD systems in Lea County. (ROC has no ownership of pipelines, wells, or facilities. Each system is owned by a consortium of oil producers, System Partners, who provide operating capital based on percent ownership or usage. Closure projects require AFE approval and work begins as funds are received.)

The revisions ROC proposes involve the on-site disposal of non-impacted concrete when practical and the use of a compacted clay layer rather than poly-liner for lining excavations. Also proposed is a revision to the closure procedure, adding an OCD verbal approval step in order for ROC to timely continue with installation of new surface facilities.

Closure reports for two locations, F-29 (two-year sampling of groundwater) and H-35 (closed), have been processed with the OCD. The P-25 location closure report has been submitted. Locations C-2 and L-21 are in remediation activity right now and Donna Williams has visited both sites. The C-2 site excavation will be managed with RE Environmental and the L-21 site will be managed with Whole Earth. ROC expects to be able to schedule final sampling for early March at both sites. The AFE has been approved for two additional sites in the Eunice-Monument-Eumont area with work start-up planned for early summer.

Thank you for your consideration of these revisions. If you have any questions, please call.

Carolyn Doran Haynes

Carolyn Doran Haynes
Operations Engineer

Cc KH; file; Ms. Donna Williams, OCD District I, Hobbs, NM

REVISED
4-23-99
2-23-00

Closure Plan for Below Grade Redwood Tank

1. Submit C-103 form to NMOCD along with the site-specific location, site assessment, work plan, time schedule, sampling and testing plan, etc., all pursuant to NMOCD guidelines.

2. Procure soil samples from 3' below bottom of tanks (9-11' below grade) at tank sides.
   A. If soil samples are < 100ppm TPH and < 250ppm Chlorides, proceed to Step 4.
   B. If soil samples are > 100ppm THP or > 250ppm Chlorides, proceed to Step 3.

3. Delineate any portion of tank site that is > 100ppm TPH or > 250ppm Chlorides with a backhoe or soil boring machine, obtaining samples for field and lab analysis at 5' intervals.
   A. When field analysis of bored-sample determines < 100ppm TPH and < 250ppm Cl, boring will be suspended pending laboratory analysis confirmation. Proceed to Step 4.
   B. If these parameter levels are not identified, then boring and sampling will continue to ground water. Upon reaching groundwater, the borehole will be cased and developed. Ground water samples will be procured and tested for major cations and anions, TDS and BETX levels. If ground water is found to exceed the WQCC standards, NMOCD will be notified immediately and the closure plan will move into Rule 19 procedures.

4. Write AFE to System Partners as directed by results of delineation of redwood tank site and of emergency pit (if both are at facility). Await approval and funding for site closing.

5. Move onto SWD facility site with temporary tank system. Re-route fluid flow from below grade redwood tanks into the temporary tank system. Plumb to SWD well.

6. Empty and clean redwood tanks, properly disposing of any BS & W. Excavate sides of redwood tanks to allow for working space to manipulate tank support banding. Remove redwood tanks reserving boards for proper disposal.

7. Excavate ramp into redwood tank hole. Remove and properly dispose of concrete base if impacted. If concrete is not impacted, use as fill (below plow depth) in excavation area.

8. Remove impacted soil (as practical) to eliminate hot spots; dispose per NMOCD guidelines.

9. Procure random 5-point composite bottom sample from 3'below tank bottom and random 4-point composite side sample for lab TPH, Benzene, and BTEX testing.
   A. If <100ppm TPH; BTEX, Benzene <10ppm; <250ppm Chlorides; proceed to Step 11.
   B. If >100ppm TPH; BTEX, Benzene >10ppm; >250ppm Chlorides; in the vadose zone but not reaching groundwater, proceed to Step 10.

10. Evaluate site for risk assessment: delineate to assess depth and horizontal extent of impact corresponding to NMOCD guidelines for site assessment value; excavate bottom and sides as practical to minimize risk; install compacted clay liner to meet or exceed 95% of a Proctor Test ASTM-D-698 with permeability (hydraulic conductivity) equal or less than $1x10^{-7}$ cm/sec for containment/isolation of impact.

11. Discuss results/risk assessment with NMOCD for verbal approval to proceed with backfill/installation of new tanks and plumbing within engineered secondary containment system.

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 87240
District II
811 South First, Artesia, NM 87210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-103
Revised March 25, 1999

WELL API NO.
30-025-12801

5. Indicate Type of Lease
STATE ☐ FEE ■

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
Oil Well ☐ Gas Well ☐ Other SWD Well

7. Lease Name or Unit Agreement Name:
Eunice Monument-Eumont (EME)

2. Name of Operator
RICE OPERATING COMPANY

8. Well No.
M-9

3. Address of Operator
122 W. TAYLOR, HOBBS, NM 88240

9. Pool name or Wildcat
SAN ANDRES

4. Well Location

Unit Letter M : 100 feet from the SOUTH line and 250 feet from the WEST line

Section 9 Township 20S Range 37E NMPM LEA County

10. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3525' GL; 3537' KB

11. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPLETION	☐	CASING TEST / CEMENT JOB	☐		
OTHER:	■			OTHER:			☐

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompilation.

Proposed work according to NMOCD approved generic closure plan for below-grade redwood tanks:
Delineate site for contamination, install temporary tank system, remove redwood tanks and clean-up location pursuant to NMOCD guidelines. Replace redwood tanks with fiberglass tanks within secondary containment. Work to begin early in September, 2001. All major events including boring, sampling events, will be coordinated to allow 48 hrs notice to NMOCD.

Information from the USGS groundwater database estimated depth to ground water at <50' and indicate closest water well to be in Unit Letter "I" of Sec. 8, T20S, R37E which is more than 1000' from the facility at SWD Well M-9. Topographic maps show no indication of surface water bodies within 1000' of the M-9 facility. A site review indicated no water sources within 1000' of M-9.

Depth to GroundWater: <50' = 20; Water source within 1000' = 0; No surface water body within 1000' = 0
Site Assessment = 20

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Carolyn Doran Haynes TITLE OPERATIONS ENGINEER DATE 7-26-01

Type or print name CAROLYN DORAN HAYNES Telephone No. 505-393-9174

(This space for State use)

APPPROVED BY _____ TITLE _____ DATE _____

Conditions of approval, if any:

District I - (505) 393-6161
P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Originated 6/27/97

Submit Original
Plus 1 Copy
to Santa Fe

PIT INVENTORY FORM

Operator: RICE OPERATING COMPANY

Address: 122 WEST TAYLOR

HOBBS, NEW MEXICO 88240

Phone Number: (505) 393-9174

Previous Operator(s): None

Is the pit permitted: Yes ☐ No ☒

Unit Letter: M Section: 9 Township: 20S Range: 37E

County: Lea County

Location Name: Eunice-Monument-Eumont Salt Water Disposal Well M-9

Number of wells to the pit: System Terminal Tanks (Varies)

Are the wells to the pit operated by one operator ☐ or multiple operators ☒

Total daily volume (in barrels) to the pit: 4,400

Pit Type: 2-Below ground redwood terminal tanks

(Emergency, Production, Workover, Reserve/Drilling(greater than 6 months old), Flare, Blowdown, Seperator, Dehydrator, Line Drip, BS&W/Tank Bottoms, Compressor, Pigging, Washdown, or other)

What types of wastes are accepted in the pit (Exempt, Non-exempt, Both, None): Exempt(production water)

Pit age (years): 35

Is the pit lined ☒ or unlined ☐

Type of liner (None, Synthetic, Clay): Redwood tank resting on concrete pad

Is leak detection present: Yes ☒ No ☐ Observation boxes around tanks

Is the pit netted: Yes ☒ No ☐ Covered with redwood top

Pit dimensions (LxWxD): two-28'diaX8'Ht

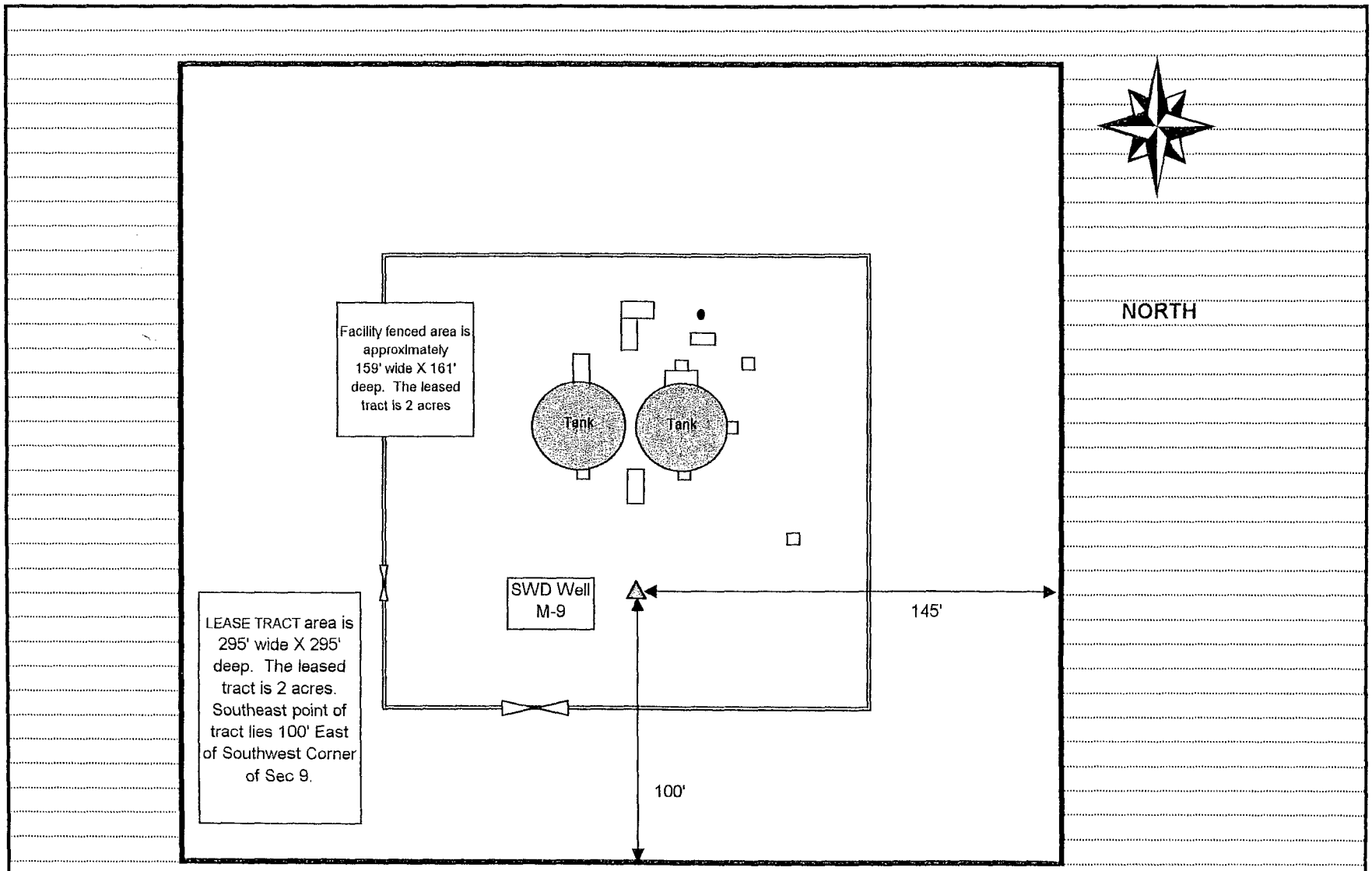
CERTIFICATION

I hereby certify that the information submitted is true and correct to the best of my knowledge and belief.

Name: Roger Hall Title: Operations Engineer

Signature: Roger Hall Date: 10/31/97

A pit is defined as any below grade or surface feature which receives any materials other than fresh water



Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	LEASE TRACT	Disposal Facility and Unloading Tank EME SWD Well M-9 Unit Letter M, Sec 9-T20S-R37E Lea County, New Mexico

50282

SALT WATER DISPOSAL LEASE

THIS AGREEMENT, made and entered into this 3rd day of April, 1989, between SW CATTLE COMPANY, hereinafter called Lessor, and RICE ENGINEERING CORPORATION, hereinafter called Lessee,

WITNESSETH:

That Lessor, for and in consideration of TWO THOUSAND AND NO/100 ($2,000.00) Dollars per annum, the receipt of which is hereby acknowledged, does hereby demise, lease and let unto Lessee, its successors or assigns, the following tract of land located in Lea County, New Mexico:

> All that certain parcel or tract of land in the SW/4 of SW/4 of Section 9, Township 20 South, Range 37 East, N.M.P.M., being fully described as follows:
> Beginning at a point on the section line 100 feet East of the Southwest corner of said Section 9; thence North 295 feet; thence East 295 feet; thence South 295 feet; thence West 295 feet to the point of beginning and containing two (2) acres, more or less.

together with the right of ingress and egress to and from the leased premises, for the uses and terms hereinafter set forth:

1. Lessee shall have the exclusive right to use the leased premises and a disposal well located thereon, in connection with the injection and disposal of oilfield brine and other waste water and their injection into the substrata of land; and for the digging of pits; for the erection of tanks and receptacles necessary in receiving, treating and disposing of said brine and waste water, and for the erection of structures, appliances, engines, and machinery necessary in connection with the operation of the well as a salt water disposal well. Lessor further grants Lessee the right to lay such pipelines as may be necessary to accomplish the purpose for which this lease is executed.

2. This lease shall be for a period of twenty (20) years from this date and shall terminate on the 3rd day of April, 2009, after which date the Lessee shall have the option to renew so long thereafter as the tract is used for salt water disposal. Said lease payment to be made annually and tendered by draft or check of Lessee, by U. S. Mail addressed to the Lessor at P. O. Box 1799, Hobbs, New Mexico 88241.

3. Lessee shall have the right to use the leased premises and the disposal well for the injection of oilfield brine and waste water into the substrata of said lands, whether produced on lands operated for oil and gas by Lessee or those so operated by others.

4. Lessee agrees to pay Lessor for damages to growing crops or grasslands or livestock arising out of or incident to the exercise of the rights granted by this lease.

5. Lessee shall have the right, during the term of this lease or within six (6) months thereafter, to remove from the leased premises all materials, equipment, and personal property placed thereon by Lessee.

6. Lessee, in operating the disposal well, shall not inject the brine or other waste water into fresh water bearing sands and shall conduct its operations in accordance with rules and regulations of the Oil Conservation Division or other proper authority.

7. Counterparts of this lease or ratifications thereof may be executed by one or more parties, with the same force and effect as if all parties had joined in the execution of the same instrument.

8. The terms of this lease shall extend to and be binding on the parties hereto, their heirs, successors or assigns.

EXECUTED this 7th day of August, 1989.

W. Trent Stradley

President

S W CATTLE COMPANY

STATE OF NEW MEXICO)
)
COUNTY OF Lea)

BEFORE ME, Notary Public in and for said County and State, on this 7th day of August, 1989, personally appeared W. T. Stradley, President of S W Cattle Company, to me known to be the identical person who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth, and in the capacity therein stated.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this date and year last above written.

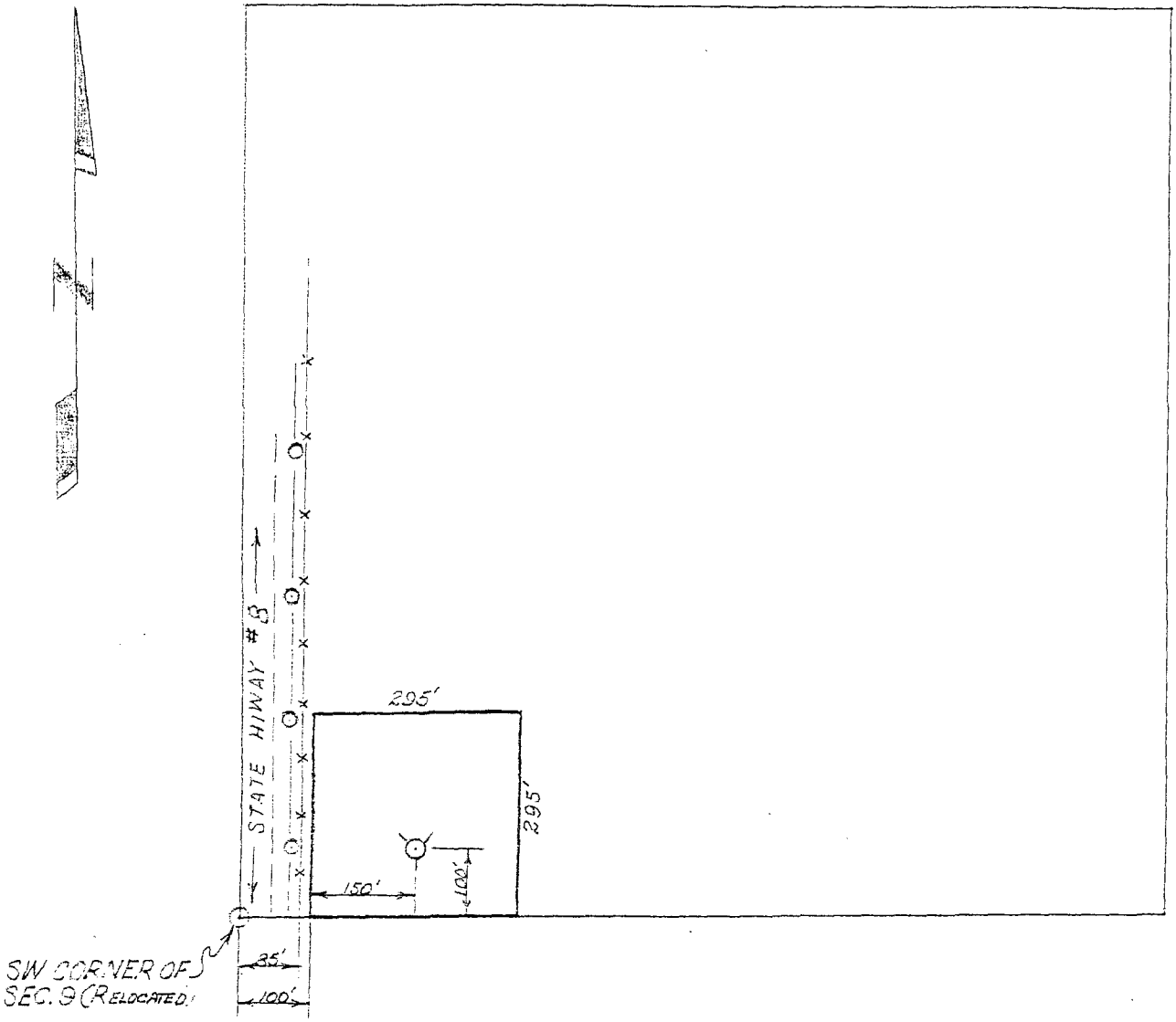
GLENNA V. RUNNELS NOTARY PUBLIC STATE OF NEW MEXICO

Glenna V. Runnels
Notary Public

My Commission Expires:
May 8, 1990

50282

STATE OF NEW MEXICO
COUNTY OF LEA
FILED
AUG 8 1989
at 12:24 o'clock P M
and recorded in Book 516
Page 27
Shirley Hooper, Lea County Clerk
By [illegible] Deputy



PROPOSED SWD WELL M-9

POWER LINE

FENCE LINE

PROPOSED LEASE BOUNDARY

DWN	L.B.B.	4/4/59	SW¼, SW¼, SECTION 9, T20S, R37E PROPOSED SWD WELL M-9	SCALE 1" = 250'
			Rice Engineering & Operating, Inc. Hobbs, New Mexico	DWG NO.

RICE Operating Company

122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

February 6, 2001

W. Trent Stradley
S & W Cattle Company
P. O. Box 1800
Hobbs, NM 88241

RE: EME SWD Facility M-9 Upgrade
SW/4 SW/4, Section 9-T20S-R37E
Lea County, NM

Dear Mr. Stradley:

Rice Operating Company (ROC) appreciates opportunities to work with landowners such as you in order to optimize and improve our operation. It is our goal to keep you informed of situations that arise during routine operations concerning the land that we lease for our facility sites.

This letter is regarding the 2-acre leased area located at SW/4 SW/4, Section 9-T20S-R37E, Lea County, NM, where ROC operates the M-9 Disposal Facility for the Eunice-Monument-Eumont (EME) Salt Water Disposal System. The Lease on this land is current.

ROC will begin upgrading the M-9 Facility in September of 2001 with new fiberglass tanks. The original redwood tanks will be eliminated and removed from the facility. The area surrounding the tank site will be evaluated for environmental impact and will be remediated to levels designated and/or approved by the New Mexico Oil Conservation Division (NMOCD). As remediation activities progress, ROC will periodically update you and invites you to visit the site. ROC will contact you for information pertaining to replacement soils.

At the completion of this upgrade, a copy of the NMOCD Closure Report will be forwarded to you. If you have any questions, comments or concerns about this upgrade, please don't hesitate to call me at the above phone number.

Sincerely,

Rice Operating Company

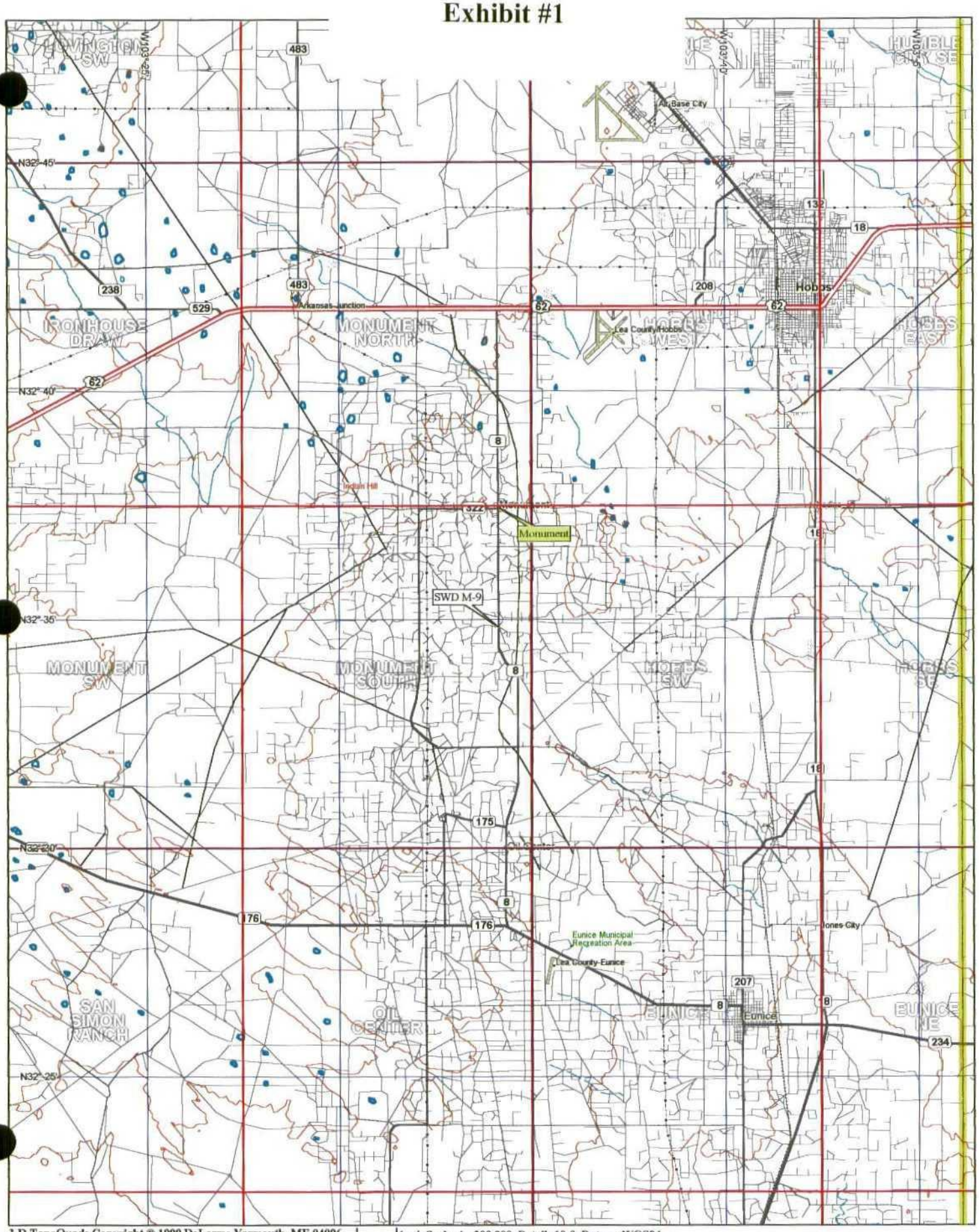
Carolyn Doran Haynes

Carolyn Doran Haynes
Operations Engineer

cc LBG, DA, file, NMOCD (2)

Exhibit Index

Exhibit #1

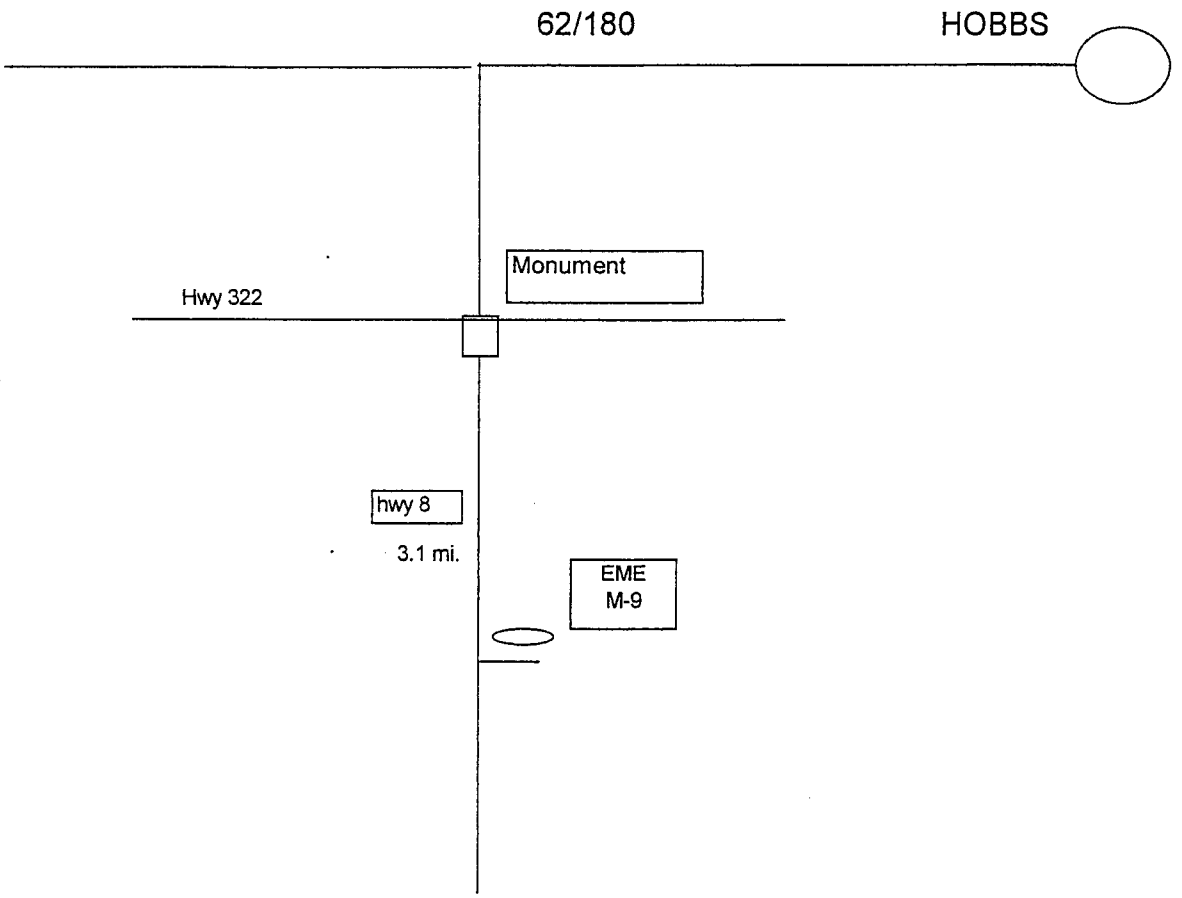


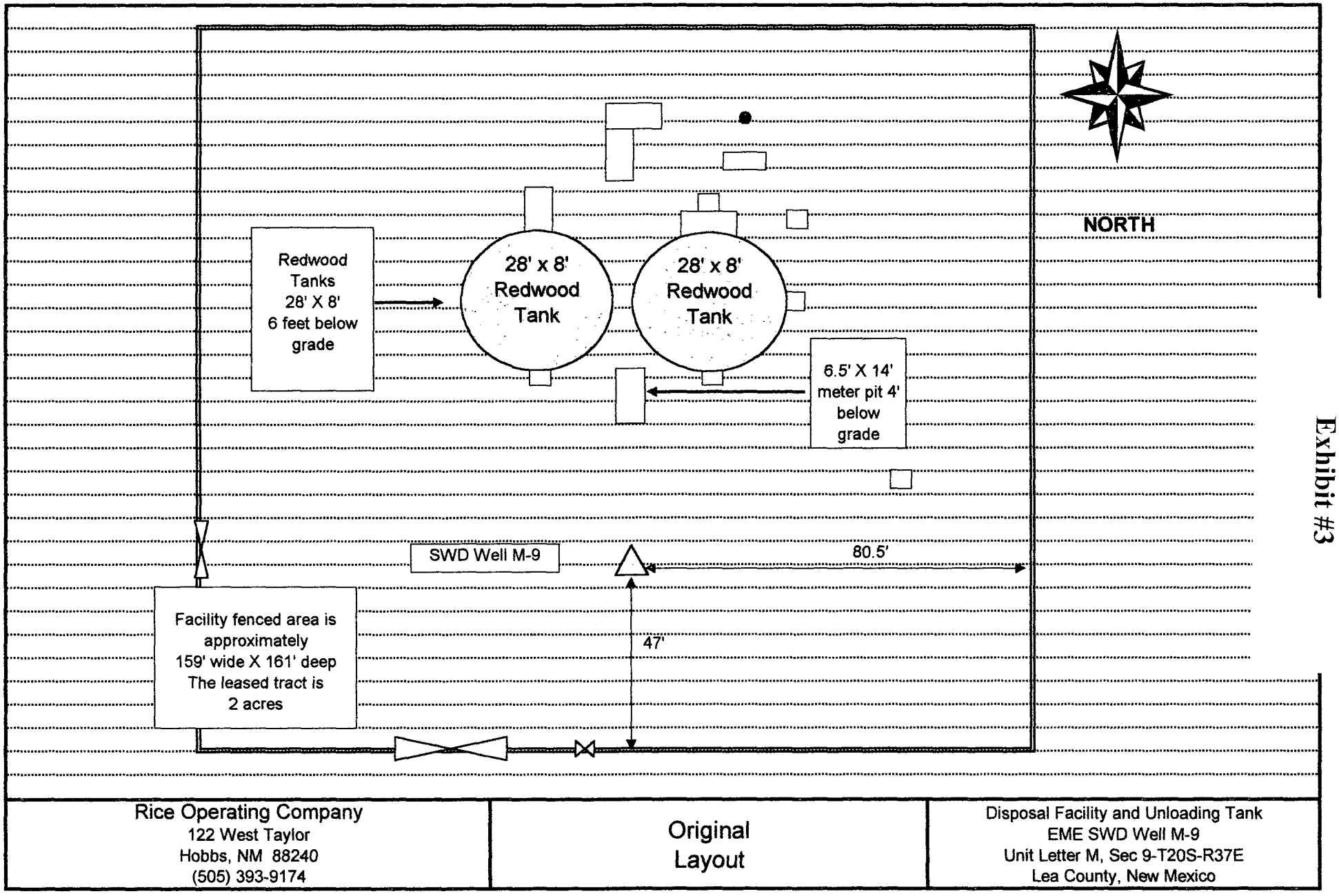
 1 mi Scale: 1 : 200,000 Detail: 10-0 Datum: WGS84

Exhibit #2

System: EME
Well: M-9
Legals: 9-20S-37E

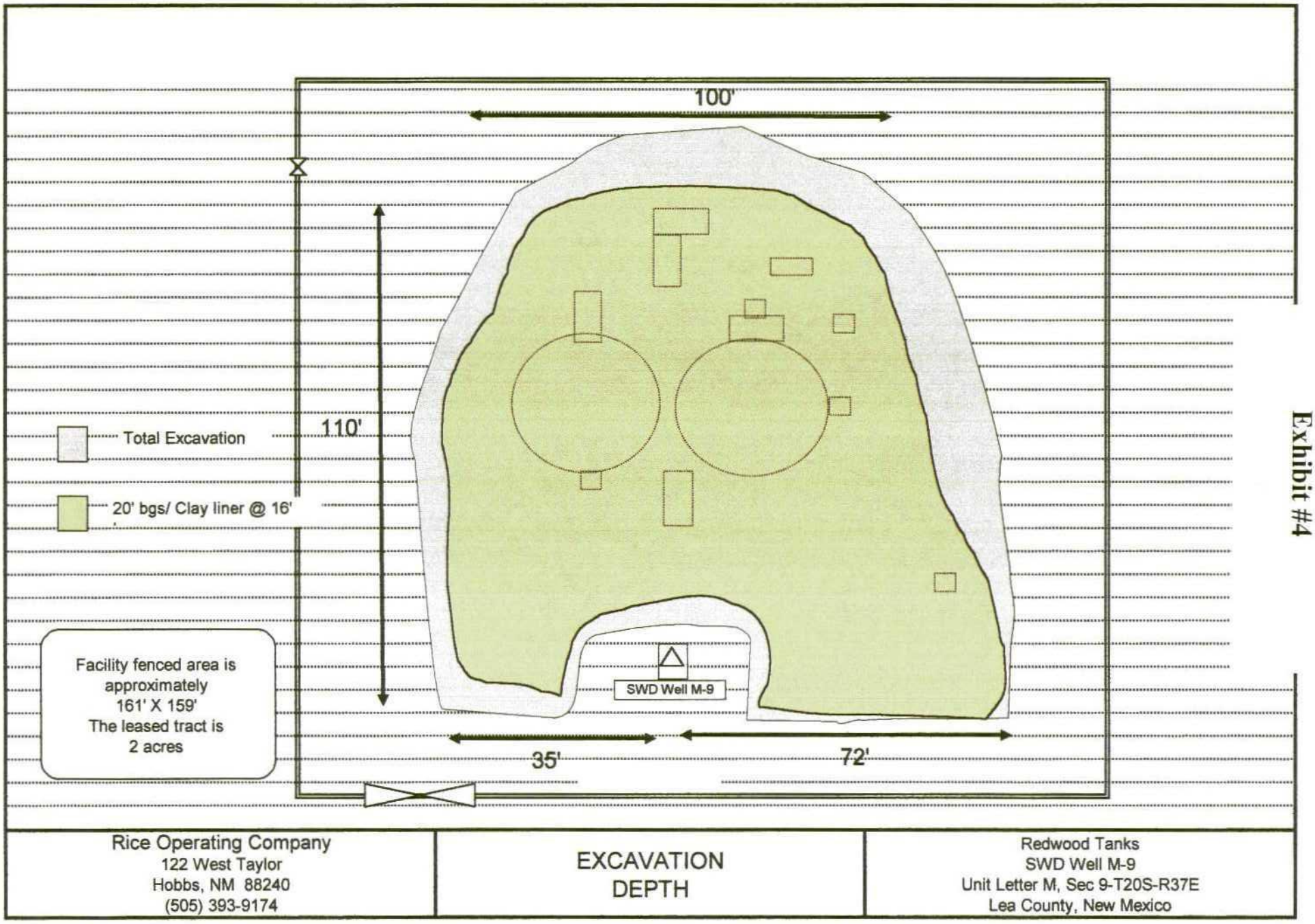
From the junction of Hwy 322 and Hwy 8 in Monument go south on Hwy 8 for 3.1 miles. Turn left at cattle guard to location on left.





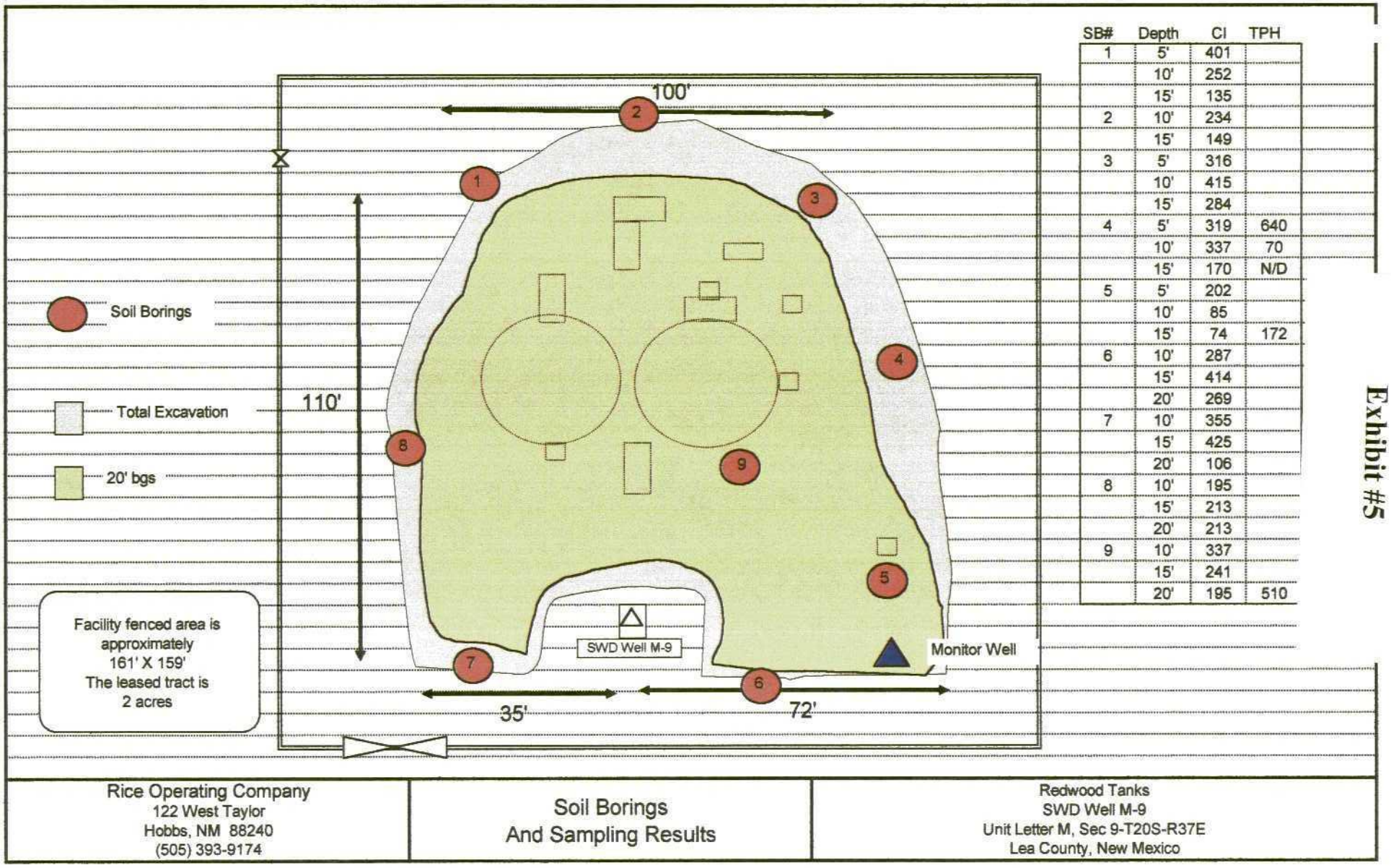
Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	Original Layout	Disposal Facility and Unloading Tank EME SWD Well M-9 Unit Letter M, Sec 9-T20S-R37E Lea County, New Mexico

Exhibit #3



Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	EXCAVATION DEPTH	Redwood Tanks SWD Well M-9 Unit Letter M, Sec 9-T20S-R37E Lea County, New Mexico

Exhibit #4

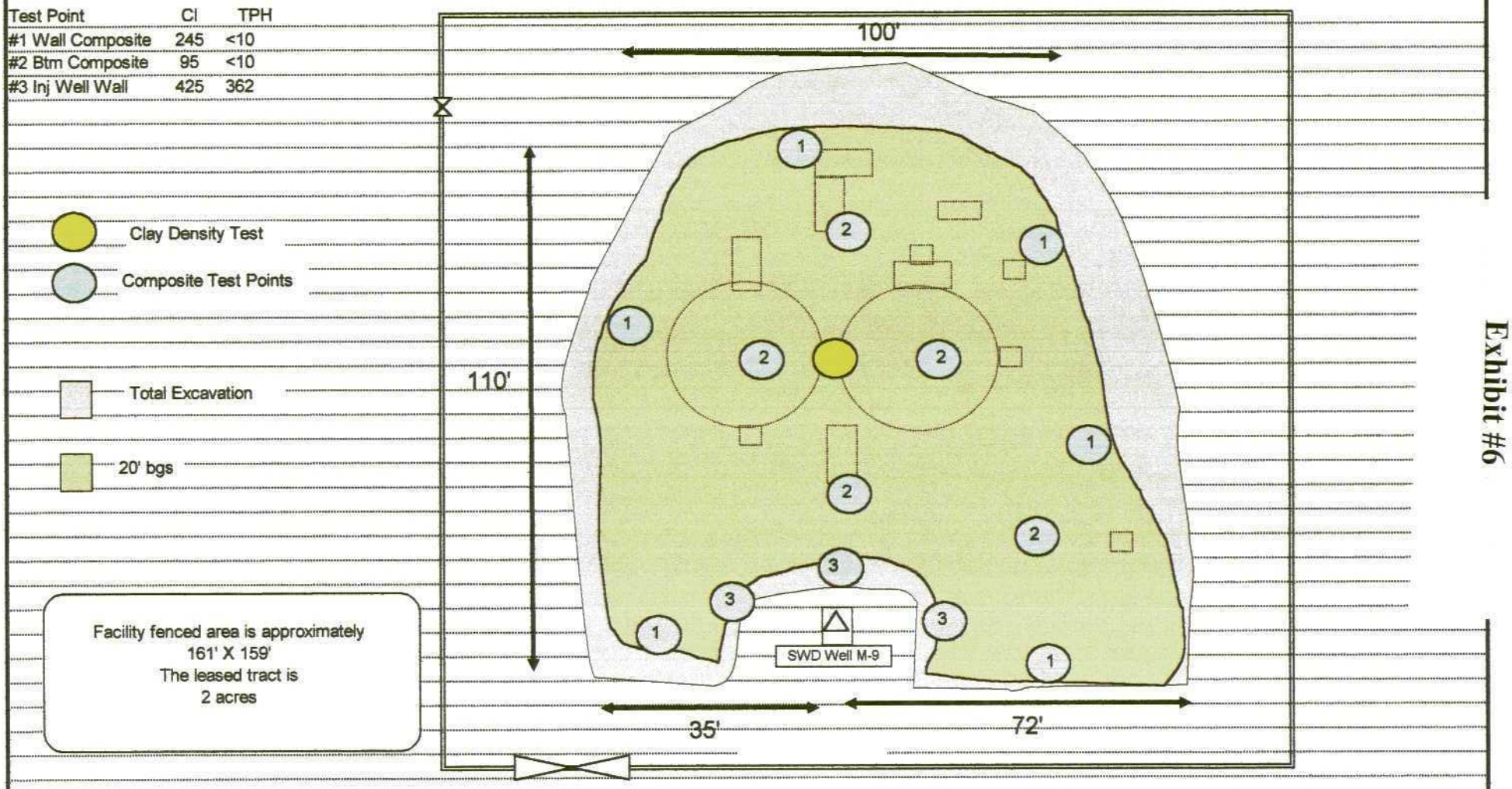


SB#	Depth	Cl	TPH
1	5'	401	
	10'	252	
	15'	135	
2	10'	234	
	15'	149	
3	5'	316	
	10'	415	
	15'	284	
4	5'	319	640
	10'	337	70
	15'	170	N/D
5	5'	202	
	10'	85	
	15'	74	172
6	10'	287	
	15'	414	
	20'	269	
7	10'	355	
	15'	425	
	20'	106	
8	10'	195	
	15'	213	
	20'	213	
9	10'	337	
	15'	241	
	20'	195	510

Exhibit #5

Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	Soil Borings And Sampling Results	Redwood Tanks SWD Well M-9 Unit Letter M, Sec 9-T20S-R37E Lea County, New Mexico

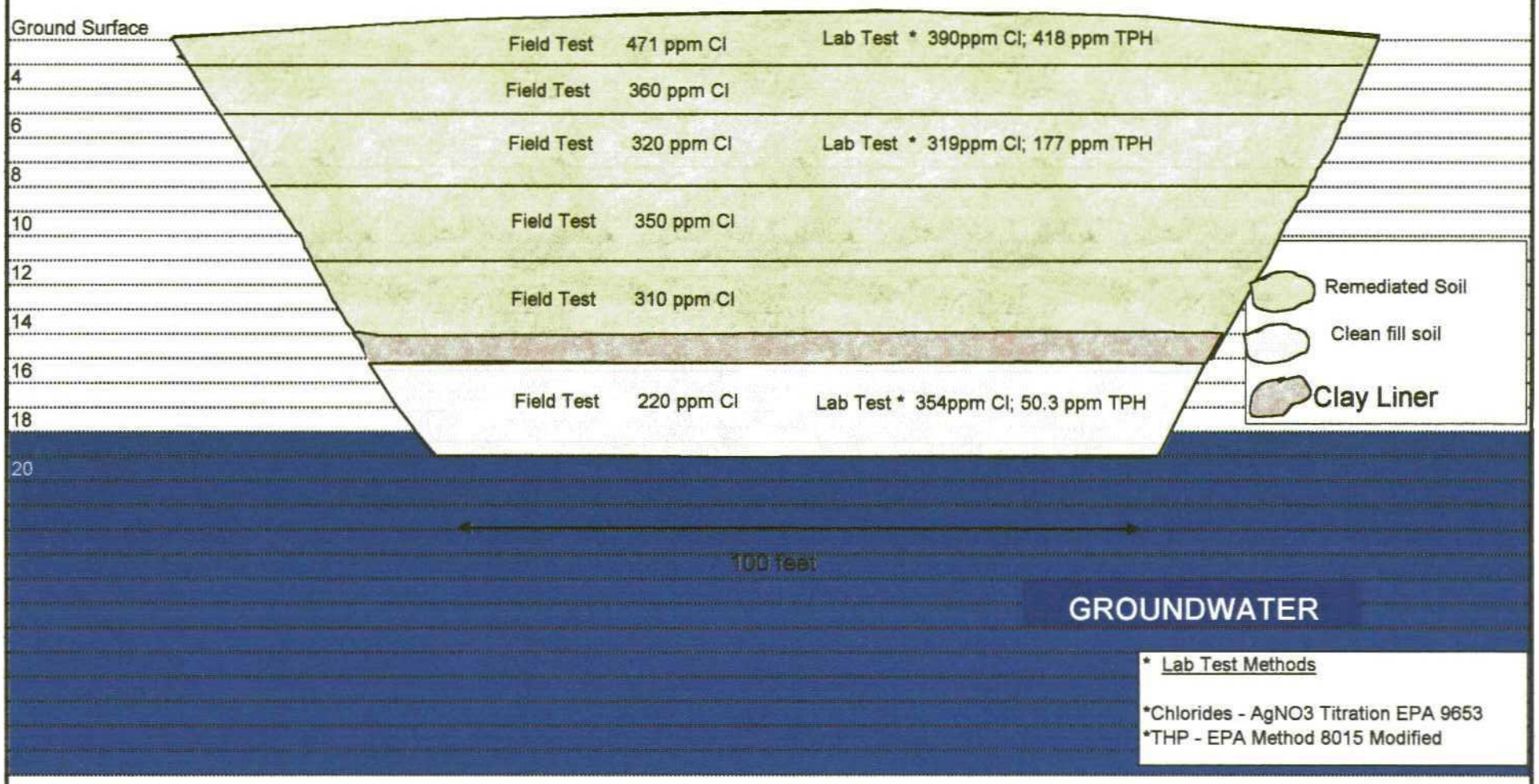
Test Point	Cl	TPH
#1 Wall Composite	245	<10
#2 Btm Composite	95	<10
#3 Inj Well Wall	425	362



Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	Sampling Layout And Results	Redwood Tanks SWD Well M-9 Unit Letter M, Sec 9-T20S-R37E Lea County, New Mexico

Exhibit #6

Redwood Tank Clay Liner and BackFill Lifts



Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	Back Fill With Clay Liner	Redwood Tank Excavation SWD Well M-9 Unit Letter M, Sec9-T20S-R37E Lea County, New Mexico

Exhibit #7

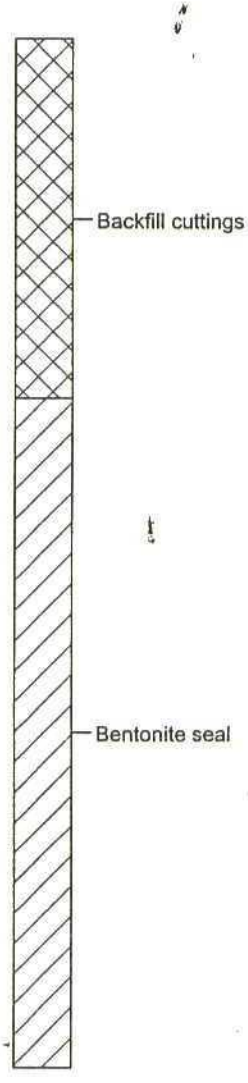
Exhibit #8

Atkins Engineering Associates, Inc. 2904 W. 2nd St., Roswell, NM 88202-3156	LOG OF BORING Rice M-9 TH's 1-9 (Page 1 of 1)

Rice Operating Company
122 West Taylor
Hobbs, New Mexico 88240
Contact: Donnie Anderson
Job #Riceoil.air.01

Date:	: 12-19-01	Auger Type	: Hollow Stem
Drill Start:	: 0830	Logged By	: Mort Bates
Drill End:	: 1400	Boring Location	: 9 different TH's South
Site Location	: 3 mi. S. of Monument, NM		: by Southwest of site

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION	Lab
0				Caliche, White, Firm, Dry	
		SP		Poorly graded sand, Tan, Loose, Dry	
5					
		SP		Poorly graded sand, tan, loose, damp	
10					
		SP		Poorly graded sand, tan, loose, moist	
15		SS		Sandstone, tan, firm, dry	
		SP		Poorly graded sand, tan, loose, wet	
20					
25					



12-21-2001 C:\MTECH46\RICEOIL\AIR\m-9.bor

Exhibit #9

Exhibit #10

Exhibit #11

Exhibit #12

LABORATORY TEST REPORT

PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827

DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS, III P.E./P.S.

TO: Rice Operating
Attn: Donnie Anderson
122 W. Taylor
Hobbs, New Mexico 88240

MATERIAL: Red Clay

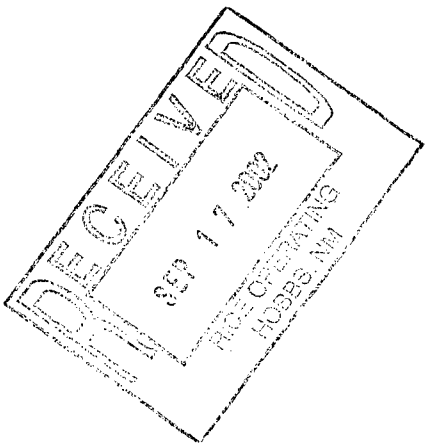
TEST METHOD: ASTM: D 2922

PROJECT: SWDM-9 EME

DATE OF TEST: September 4, 2002

DEPTH: Finished Subgrade

TEST NO.	LOCATION	DRY DENSITY % Maximum	% MOISTURE	DEPTH
SG-1	Pit SWD M-9 EME	105.0	13.0	



CONTROL DENSITY: 95.5
ASTM: D 698

OPTIMUM MOISTURE: 24.8%

REQUIRED COMPACTION: 95%

LAB NO.: 02-3109-3110

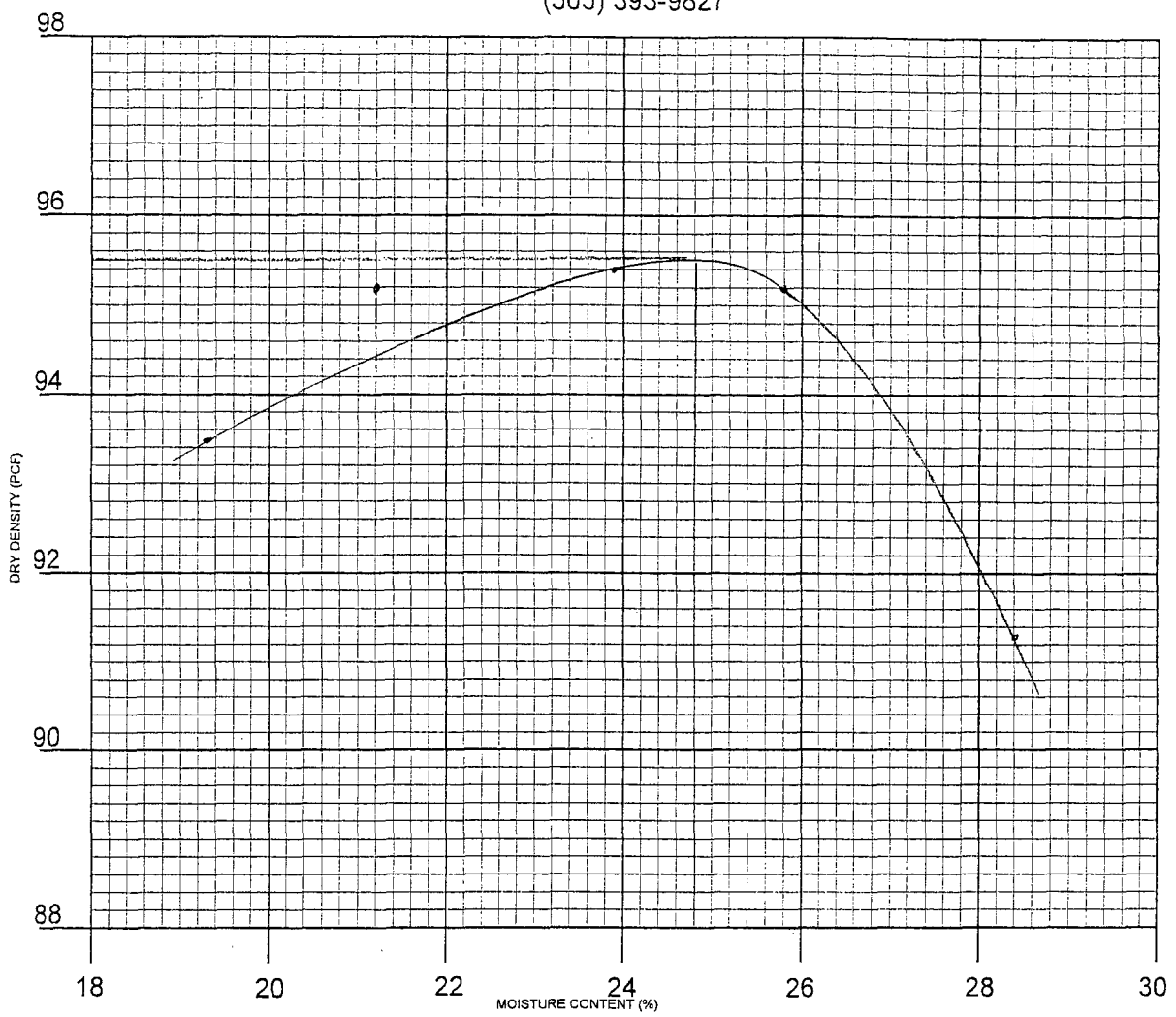
COPIES TO: Rice - Don Anderson

PETTIGREW and ASSOCIATES

BY: S.E.T.

PETTIGREW and ASSOCIATES, P.A.
1110 N. GRIMES ST.
HOBBS, NM 88240
(505) 393-9827

DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS III, P.E./P.S.



CLIENT: Rice Operating PROJECT: General Information

SAMPLE LOCATION: Byrd Pit

SOIL DESCRIPTION: Red Clay

SOIL CLASSIFICATION: _____ TEST METHOD: ASTM: D 698

PERMEABILITY 2.42 E.-09 cm/sec Delivered 8/23/02

DATE: 8/26/02 LAB NO. 02-2917-2919

DRY WEIGHT LB/CU. FT. 95.5 MOISTURE CONTENT % 24.8

SIEVE ANALYSIS - % PASSING									

PETTIGREW and ASSOCIATES

COPIES: Rice - Donnie Anderson

BY: _____ S.E.I.

amec

PROJECT:	RICE OPERATING 2002.1117	**JOB NO:**	Z-118-000075
LOCATION:	HOBBS, N.M.	**WORK ORDER NO:**	3
MATERIAL:	RED CLAY	**LAB NO:**	3
SAMPLE SOURCE:	BYRD PIT	**DATE SAMPLED:**	8/8/02
SAMPLE PREP:	REMOLDED TO 95% MAX DRY DENSITY AND -2% OF OPT. MOISTURE		

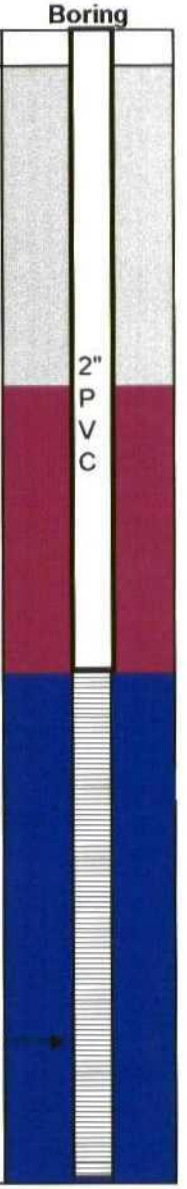
MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING A FLEXIBLE WALL PERMEAMETER (ASTM 5084-90) "CV" METHOD C

AVERAGE PERMEABILITY			2.42E-09 cm/sec
INITIAL LENGTH OF SPECIMEN			7.14 cm
INITIAL DIAMETER OF SPECIMEN			7.14 cm
INITIAL WATER CONTENT			26.3 %
INITIAL DRY UNIT WEIGHT			91.1 pcf
INITIAL VOLUME			17.45 cu.in
PERMEANT LIQUID			BOTTLED WATER
MAGNITUDE OF TOTAL BACK PRESSURE			65.2 psi
EFFECTIVE CONSOLIDATION STRESS			5 psi
RANGE OF HYDRAULIC GRADIENT USED	17.2	to	7.1
FINAL LENGTH OF SPECIMEN			7.20 cm
FINAL DIAMETER OF SPECIMEN			7.23 cm
FINAL WATER CONTENT			34.8 %
FINAL DRY UNIT WEIGHT			88.1 pcf
FINAL VOLUME			18.04 cu.in
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	85%	and	105%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.651

TIME INTERVAL sec	K cm/sec	K ft/yr.
51852	2.42E-09	0.00
56040	2.43E-09	0.00
60583	2.41E-09	0.00
65205	2.43E-09	0.00

DRILLING LOG	Site Name/Location					Logged by: F. Root
RICE *Operarting Company* 122 West Taylor Hobbs, New Mexico 88240 Phone: (505) 393-9174 Fax: (505) 397-1471	**M-9 SWD Facility** **9-T20S-R37E** **EME** **SWD System** **Lea County, NM**	Well No: MW1	Date Drilled: 4/2/02		Driller: Eades	Construction: Sand and bentonite above screen.
		Well Depth: 35'	Boring Depth: 35'		Well Material: PVC	
		Casing Length: 20'	Boring Diameter:	4.75"	Casing Size: 2"	
		Screen Length: 15'	Drilling Method: Air Rotary		Slot Size: N/A	

DEPTH	SUBSURFACE LITHOLOGY	SAMPLE TYPE	TEST (ppm)	REMARKS	MW Boring
0	Ground surface		Cl^-	TPH (EPA 418.1) ppm	
1	Topsoil				
2					
3	Sand & sandy clay				
4					
5		Grab	100	13	
6				cuttings	
7					
8					
9					
10		Grab	100	10	
11					
12					
13					
14					
15		Grab	100	14	
16				bentonite	
17					
18	Sand				
19					
20	Sand & sandy brown clay	Grab	100	17	
21					
22					
23		Grab	100	13	
24				water	
25		Grab	75	14	
26					
27					
28		Grab	50	20	
29					
30		Grab	75	16	
31				screen	
32					
33					
34					
35					

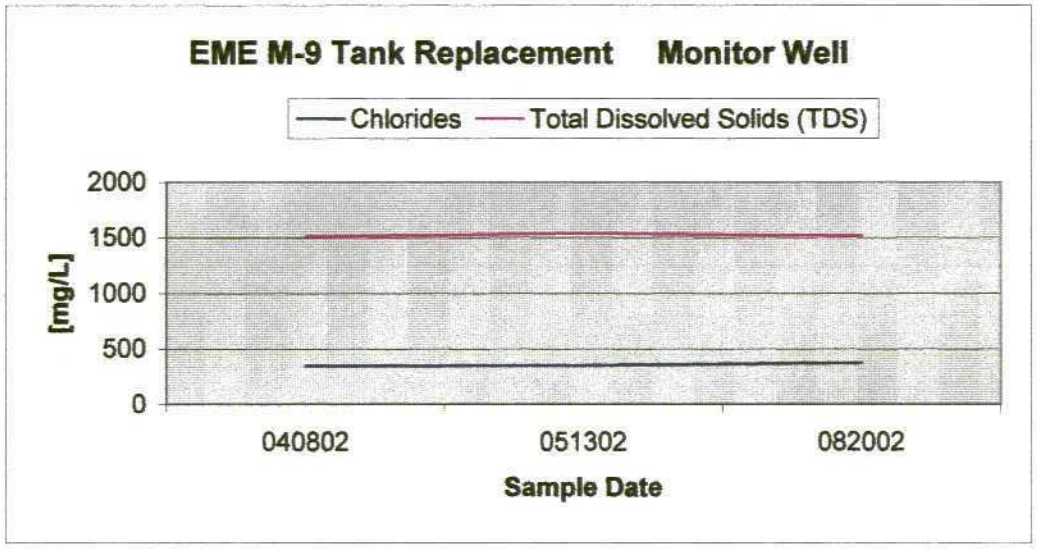


EME M-9 Tank Replacement
M, 9, 20S, 37E SWD facility

Rice Operating Co. Monitor Well Data Sheet

All parameter concentrations are in mg/L.

MW #	WATER LEVEL (ft)	TOTAL DEPTH (ft)	WELL VOLUME (gal)	VOLUME BAILED (gal)	SAMPLE DATE	TIME	CL-	TDS	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
1	XXX	XXX	XXX	XXX	040802	0930	348	1512	<0.002	<0.002	<0.002	<0.006
1	21.02	38.40	2.780	8.50	051302	1630	354	1540	<0.001	<0.001	<0.001	<0.001
1	22.45	38.41	2.554	7.75	082002	1015	376	1517	<0.002	<0.002	<0.002	<0.006



RICE Operating Company
122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. 7001 2510 0007 2763 5183

May 9, 2002

Mr. Roger Anderson
NM Energy, Minerals, and Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, NM 87505

RE: NOTIFICATION OF GROUNDWATER IMPACT
EUNICE MONUMENT EUMONT (EME) SWD SYSTEM, M-9 SWD FACILITY
Unit Letter M, Sec. 9, T20S, R37E, Lea County, NM
NMOCD Case # 1R0331

Mr. Anderson:

Rice Operating Company (ROC) takes this opportunity to notify the Director of the NMOCD Environmental Bureau of groundwater impact in accordance with NM Rule 116. The M-9 SWD Facility site qualifies for this notification. The remediation of this site may fall under NM Rule 19 procedures.

The M-9 SWD Facility is part of the Redwood Tank Replacement/Closure Plan scheduled for 2002. Impact of the vadose zone was delineated by soil boring at this site. Vadose zone impact was discovered to groundwater. A monitor well was installed and developed pursuant to NMOCD guidelines. A water sample was taken to a certified lab for analyses. The results are listed in the following table. All results are in mg/L.

SITE	UNIT	SEC	T	R	CHLORIDES	TDS	BENZENE
M-9 SWD	M	9	20S	37E	348	1,512	<0.002

The results demonstrate chlorides and TDS are in excess of the WQCC standards. Groundwater in this area is 21' bgs.

The replacement/closure plan for this site was submitted to the NMOCD and assigned Case # 1R0331. The plan is presently under review for revision. We will schedule all major events with a 48 hour advance notification to the NMOCD. We anticipate the closure report for this site to be completed in September 2002.

ROC is the service provider (operator) for the EME Salt Water Disposal System and has no ownership of any portion of the pipelines, wells or facilities. The EME SWD System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

Please accept this notification for the M-9 SWD Facility.

RICE OPERATING COMPANY

Donnie Anderson
Project Leader-Environmental

Cc: LBG, CDH, SC, file

Mr. Chris Williams
NMOCD, District 1 Office
1625 N. French Drive
Hobbs, NM 88240

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL TECHNOLOGY GROUP, INC.
ATTN: DONNIE ANDERSON
2540 W. MARLAND
HOBBS, NM 88240
FAX TO: (505) 397-4701

Receiving Date: 04/08/02
Reporting Date: 04/10/02
Project Number: RIC
Project Name: EME M-9
Project Location: MONUMENT, NM

Analysis Date: 04/10/02
Sampling Date: 04/08/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TDS (mg/L)
H6657-1	MW 1	1512
Quality Control		NR
True Value QC		NR
% Accuracy		NR
Relative Percent Difference		8.1

METHOD: 600/4-79-020 160.1

Chemist

04/10/2002
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL TECHNOLOGY GROUP, INC.
ATTN: DONNIE ANDERSON
2540 W. MARLAND
HOBBS, NM 88240
FAX TO: (505) 397-4701

Receiving Date: 04/08/02
Reporting Date: 04/10/02
Project Number: RIC
Project Name: EME M-9
Project Location: MONUMENT, NM

Sampling Date: 04/08/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	04/10/02	04/08/02	04/08/02	04/08/02	04/08/02	04/08/02
H6557-1 MW 1	180	96	38	6.63	2365	178
Quality Control	NR	55	49	5.27	1489	NR
True Value QC	NR	50	50	5.00	1413	NR
% Recovery	NR	110	97.2	105	105	NR
Relative Percent Difference	NR	0	6.0	0	0.3	NR
METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	04/08/02	04/08/02	04/08/02	04/08/02	04/08/02	04/10/02
H6557-1 MW 1	348	122	0	217	7.12	1512
Quality Control	1040	52.66	NR	975	7.00	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	104	105	NR	97.5	100	NR
Relative Percent Difference	0.0	0.6	NR	2.7	0.3	8.1
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

04/10/2002
Date

h6557

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL TECHNOLOGY GROUP, INC.
ATTN: DONNIE ANDERSON
2540 W. MARLAND
HOBBS, NM 8240
FAX TO:

Receiving Date: 04/08/02
Reporting Date: 04/09/02
Project Number: RIC
Project Name: EME M-9
Project Location: MONUMENT, NM

Sampling Date: 04/08/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE	04/08/02	04/08/02	04/08/02	04/08/02
H6657-1 MW 1	<0.002	<0.002	<0.002	<0.006
Quality Control	0.102	0.101	0.106	0.306
True Value QC	0.100	0.100	0.100	0.300
% Recovery	102	101	106	102
Relative Percent Difference	3.1	1.1	2.9	3.1

METHOD: EPA SW-846 8260

Burgess J. A. Cooke
Chemist

4/9/02
Date

CoC #48

PAGE 01

PAGE 01

CARDINAL LAB HOBBS

CARDINAL LAB ABILENE

10/01/2002 14:04 5053932476 915737820

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240

(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name: ETGI	BILL TO
Project Manager: Donnie Anderson	P.O. #:
Address: 2540 W Marland	Company: Rice Operating
City: Hobbs State: NM Zip: 88240	Attn: Donnie Anderson
Phone #: (505) 397-4882 Fax #: (505) 397-4701	Address: 122 W Taylor
Project #: RIC Project Owner:	City: Hobbs
Project Name: EME M-9	State: NM Zip: 88240
Project Location: Monument NM	Phone #: (505) 393-9174
Sampler Name: Simon Casas	Fax #: (505) 397-1471

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX	TDS	CATIONS	ANIONS
H6657-1	MW 1	X	3	X							X		4-8-02	0845	X	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts unpaid after 30 days past date at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Simon Casas	Date: 4-8-02 Time: 0930	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: 4-8-02 Time: 9:30	Received By: (Lab Staff) Amy Hill	Fax Result: ☑ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Temp. °C / Intact? ☐ Yes ☐ No	Checked By: (Initials)	REMARKS: Fax Results to Rice 1 - BTEX - 60 1 - TDS - 12,150 1 - Cations & Anions 135

† Cardinal cannot accept verbal changes. Please fax written changes to (505) 393-2476.

STANDARD

12.45

710 0

ANALYTICAL REPORT

Prepared for:

DONNIE ANDERSON
RICE OPERATING COMPANY
122 W. TAYLOR
HOBBS, NM 88242

Project: M-9

Order#: G0203355

Report Date: 05/17/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RICE OPERATING COMPANY
122 W. TAYLOR
HOBBS, NM 88242
505-397-1471

Order#: G0203355
Project:
Project Name: M-9
Location: EME SWD

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0203355-01	MW 1	WATER	5/13/02 16:30	5/15/02 10:00	See COC	See COC

Lab Testing: **Rejected:** No **Temp:** See COC

8021B/5030 BTEX
Anions
Cations
Total Dissolved Solids (TDS)

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DONNIE ANDERSON
RICE OPERATING COMPANY
122 W. TAYLOR
HOBBS, NM 88242

Order#: G0203355
Project:
Project Name: M-9
Location: EME SWD

Lab ID: 0203355-01
Sample ID: MW 1

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0001724-02		5/15/02 17:36	1	1	CK	8021B

Parameter	Result µg/L	RL
Benzene	**<1.00**	1.00
Ethylbenzene	**<1.00**	1.00
Toluene	**<1.00**	1.00
p/m-Xylene	**<1.00**	1.00
o-Xylene	**<1.00**	1.00

Approval: Celey D. Keene 5/18/02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DONNIE ANDERSON
RICE OPERATING COMPANY
122 W. TAYLOR
HOBBS, NM 88242

Order#: G0203355
Project:
Project Name: M-9
Location: EME SWD

Lab ID: 0203355-01
Sample ID: MW 1

Anions

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Bicarbonate Alkalinity	232	mg/L	1	2.0	310.1	5/15/02	SB
Carbonate Alkalinity	<0.10	mg/L	1	0.1	310.1	5/15/02	SB
Chloride	354	mg/L	1	5.00	9253	5/16/02	SB
Hydroxide Alkalinity	<0.10	mg/L	1	0.1	310.1	5/15/02	SB
SULFATE, 375.4	610	mg/L	25	12.5	375.4	5/17/02	SB

Cations

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Calcium	94.0	mg/L	50	0.500	6010B	5/16/02	SM
Magnesium	39.9	mg/L	10	0.010	6010B	5/16/02	SM
Potassium	7.58	mg/L	10	0.500	6010B	5/16/02	SM
Sodium	330	mg/L	250	2.50	6010B	5/16/02	SM

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Total Dissolved Solids (TDS)	1540	mg/L	1	5.0	160.1	5/15/02	SB

Approval: Raland K Tuttle 5-19-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS I, LTD. 12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0203355

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-µg/L	0001724-02			<1.00		
Ethylbenzene-µg/L	0001724-02			<1.00		
Toluene-µg/L	0001724-02			<1.00		
p/m-Xylene-µg/L	0001724-02			<1.00		
o-Xylene-µg/L	0001724-02			<1.00		
CONTROL WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-µg/L	0001724-03		100	115	115.%	
Ethylbenzene-µg/L	0001724-03		100	114	114.%	
Toluene-µg/L	0001724-03		100	112	112.%	
p/m-Xylene-µg/L	0001724-03		200	225	112.5%	
o-Xylene-µg/L	0001724-03		100	113	113.%	
CONTROL DUP WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-µg/L	0001724-04		100	114	114.%	0.9%
Ethylbenzene-µg/L	0001724-04		100	110	110.%	3.6%
Toluene-µg/L	0001724-04		100	109	109.%	2.7%
p/m-Xylene-µg/L	0001724-04		200	225	112.5%	0.%
o-Xylene-µg/L	0001724-04		100	112	112.%	0.9%
SRM WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-µg/L	0001724-05		100	115	115.%	
Ethylbenzene-µg/L	0001724-05		100	112	112.%	
Toluene-µg/L	0001724-05		100	109	109.%	
p/m-Xylene-µg/L	0001724-05		200	226	113.%	
o-Xylene-µg/L	0001724-05		100	111	111.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Anions

Order#: G0203355

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Bicarbonate Alkalinity-mg/L	0001737-01			<2.00		
Carbonate Alkalinity-mg/L	0001738-01			<0.10		
Chloride-mg/L	0001733-01			<5.00		
Hydroxide Alkalinity-mg/L	0001739-01			<0.10		
SULFATE, 375.4-mg/L	0001741-01			<0.50		
DUPLICATE WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Bicarbonate Alkalinity-mg/L	0203354-01	292		293		0.3%
Carbonate Alkalinity-mg/L	0203354-01	0		<0.10		0.%
Hydroxide Alkalinity-mg/L	0203354-01	0		<0.10		0.%
SULFATE, 375.4-mg/L	0203355-01	610		610		0.%
MS WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/L	0203354-01	860	500	1360	100.%	
MSD WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/L	0203354-01	860	500	1360	100.%	0.%
SRM WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Bicarbonate Alkalinity-mg/L	0001737-04		0.05	0.0496	99.2%	
Carbonate Alkalinity-mg/L	0001738-04		0.05	0.0496	99.2%	
Chloride-mg/L	0001733-04		5000	5050	101.%	
Hydroxide Alkalinity-mg/L	0001739-04		0.05	0.0496	99.2%	
SULFATE, 375.4-mg/L	0001741-04		50	49.9	99.8%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Cations

Order#: G0203355

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Calcium-mg/L	0001725-02			<0.010		
Magnesium-mg/L	0001725-02			<0.001		
Potassium-mg/L	0001725-02			<0.050		
Sodium-mg/L	0001725-02			<0.010		
DUPLICATE WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Calcium-mg/L	0203354-01	266		264		0.8%
Magnesium-mg/L	0203354-01	106		106		0.%
Potassium-mg/L	0203354-01	15.4		14.8		4.%
Sodium-mg/L	0203354-01	303		308		1.6%
SRM WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Calcium-mg/L	0001725-05		2	1.99	99.5%	
Magnesium-mg/L	0001725-05		2	2.06	103.%	
Potassium-mg/L	0001725-05		2	1.77	88.5%	
Sodium-mg/L	0001725-05		2	1.91	95.5%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0203355

BLANK WATER	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Total Dissolved Solids (TDS)-mg/L	0001731-01			<5.00		
DUPLICATE WATER	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Total Dissolved Solids (TDS)-mg/L	0203354-01	2680		2760		2.9%

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Donnie Anderson
Company Name: Rice Operating
Company Address: 122 W. Taylor
City/State/Zip: Hobbs, NM 88240
Telephone No: (505) 393-9174.
Fax No: (505) 397-1471
Sampler Signature: Kristin Farris

Project Name: M-9
Project #:
Project Loc: EME SWD
PO #: 716

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TDS / CL / ~~SAR~~ / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)	Standard TAT
0203355-01	MW 1	5-13-02	4:37pm	1								✓				✓									
	MW 1	5-13-02	4:30pm	2	✓		✓					✓											✓		

TCLP:
TOTAL:

Special Instructions:
Major anions/cations; Fax results to K. Farris

Relinquished by:	Date	Time	Received by:	Date	Time
Kristin Farris	5-14-02	4:30pm			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
[signature]	5-15-02	10:00Am	[signature]	5-15-02	1000

Sample Containers Intact? Y N
Temperature Upon Receipt:
Laboratory Comments:
Rec 0.5°C - 40mL glass
18.5°C - L HDPE

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 08/20/02
Reporting Date: 08/23/02
Project Number: NOT GIVEN
Project Name: MW 1
Project Location: EME M-9

Sampling Date: 08/20/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		08/23/02	08/21/02	08/21/02	08/21/02	08/21/02	08/21/02
H6967-1	MW 1	336	86.0	32.3	7.6	2087	284
Quality Control		NR	42.4	48.0	4.62	1489	NR
True Value QC		NR	50.0	50.0	5.00	1413	NR
% Recovery		NR	84.9	96.1	92.4	105	NR
Relative Percent Difference		NR	11.8	4.4	9.0	0.3	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl- (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		08/21/02	08/21/02	08/21/02	08/21/02	08/21/02	08/21/02
H6967-1	MW 1	376	263	0	347	7.13	1517
Quality Control		1030	49.34	NR	1016	6.98	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		103	98.7	NR	102	99.8	NR
Relative Percent Difference		1.2	0.2	NR	13.6	0.4	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

8-23-02
Date

RECEIVED
AUG 27 2002
RICE OPERATING
HOBBS, NM

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 08/20/02
Reporting Date: 08/23/02
Project Number: NOT GIVEN
Project Name: MW 1
Project Location: EME M-9

Sampling Date: 08/20/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE	08/23/02	08/25/02	08/23/02	08/23/02
H6967-1 MW 1	<0.002	<0.002	<0.002	<0.006
Quality Control	0.111	0.104	0.106	0.309
True Value QC	0.100	0.100	0.100	0.300
% Recovery	111	104	106	103
Relative Percent Difference	7.3	4.7	2.2	3.8

METHOD: EPA SW-846 8260

Chemist

8/23/02
Date

RECEIVED
AUG 27 2002
RICE OPERATING
HOBBS, NM

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name:	Rice Operating
Project Manager:	Kristin Farris
Address:	122 W. Taylor
City:	Hobbs
State:	NM
Zip:	88240
Phone #:	(505) 393-9174
Fax #:	(505) 397-1471
Project #:	
Project Owner:	
Project Name:	MW 1
Project Location:	EME M-9
Sampler Name:	K. Farris

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	Major anions / cations	TDS
H6967-1	MW 1	G	1	X							X		082002	1015		X	X
	MW 1		2	X							X		082002	1015	X		

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Kristin Farris	Date: 082002 Time: 1625	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: Time:	Received By: (Lab Staff) Burgess M. Cooke	Fax Result: ☑ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Temp °C: Cool; Intact? ☑ Yes ☐ No	Checked By: (Initials)	REMARKS: Fax results to D. Anderson ASAP.

† Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.

Rice Operating Company

Quality Procedure

Procedure for Conducting Field TPH Analysis

1.0 Purpose

To define the procedure to be used in conducting total percentage hydrocarbon testing in accordance with EPA Method 418.1 (modified) using the "MEGA" TPH Analyzer.

2.0 Scope

This procedure is to be used for field testing and on site remediation information.

3.0 Procedure

3.1 The G.A.C. "MEGA" TPH analyzer is an instrument that measures concentrations of aliphatic hydrocarbons by means of infra-red spectrometry. It is manufactured to specifications and can accurately measure concentrations from two parts per million through 100,000 parts per million. The unit is factory calibrated however minor calibration adjustments may be made in the field. Quality Procedure 25 defines the field calibration methods to be employed.

3.2 Prior to taking the machine into the field, insert a 500 ppm and 5,000 ppm calibration standard into the sample port of the machine. Zero out the Range dial until the instrument records the exact standard reading.

3.3 Once in the field, insert a large and small cuvette filled with clean Freon 113 into the sample port of the machine. Use the range dial to zero in the reading. If the machine does not zero, do not attempt to adjust the span dial. Immediately implement Quality Procedure 25.

3.4 Place a 100 g weight standard on the field scale to insure accuracy. Zero out the scale as necessary.

3.5 Tare a clean 100 ml sample vial with the Teflon cap removed. Add 10 g (+/-.01g), of sample soil into the vial taking care to remove rocks or vegetable matter from the sample to be tested. If the sample is wet, add up to 5 g silica gel or anhydrous sodium sulfate to the sample after weighing.

3.6 Dispense 10 ml Freon 113 into the sample vial.

3.7 Cap the vial and shake for five minutes.

3.8 Carefully decant the liquid contents of the vial into a filter/desiccant cartridge and affix the cartridge cap. Recap the sample vial and set aside.

3.9 Insert the metal tip of the pressure syringe into the cap opening and slowly pressurize. **WARNING: APPLY ONLY ENOUGH PRESSURE ON THE SYRINGE TO EFFECT FLOW THROUGH THE FILTERS. TOO MUCH PRESSURE MAY CAUSE THE CAP TO SEPARATE FROM THE BODY OF THE CARTRIDGE.** Once flow is established through the cartridge, direct the flow into the 5 cm cuvette until the cuvette is full. Reverse the pressure on the syringe and remove the syringe tip form the cartridge cap. Set the cartridge aside in vertical position.

3.10 The cuvette has two clear and two frosted sides. Hold the cuvette by the frosted sides and carefully insert into the sample port of the machine. Read the right hand digital read-out of the instrument. If the reading is less than 1,000 ppm, the results shall be recorded in the field Soil Analysis Report. If the result is higher than 1,000 ppm, continue with the dilution procedure.

4.0 Dilution Procedure

4.1 When initial readings are greater than 1,000 ppm using the 5 cm cuvette, pour the contents of the 5 cm cuvette into a 1 cm cuvette. Insert the 1 cm cuvette into the metal holder and place into the test port of the instrument.

4.2 Read the left hand read-out of the machine. If the results are less than 10,000 ppm, record the results into the field Soil Analysis Reports. If greater than 10,000 ppm, continue the dilution process. **Concentrations >10,000 ppm are to be used for field screen purposes only.**

4.3 Pour the contents of the small cuvette into a graduated glass pipette. Add 10 ml pure Freon 113 into the pipette. Shake the contents and pour into the 1cm. cuvette. Repeat step 4.2 adding two zeros to the end of the displayed number. If the reported result is greater than 100,000 ppm, the accuracy of further readings through additional dilutions is extremely questionable. **Do not use for reporting purposes.**

4.4 **Pour all sample Freon into the recycling container.**

5.0 Split Samples

5.1 Each tenth test sample shall be a split sample. Decant approximately one half of the extraction solvent through a filter cartridge and insert into the instrument to obtain a concentration reading. Clean and rinse the cuvette and decant the remainder of the fluid to obtain a second concentration reading from the same sample. If the second reading varies by more than 1% from the original, it will be necessary to completely recalibrate the instrument.

Rice Operating Company

Quality Procedure

Procedure for Obtaining Soil Samples for Transportation to a Laboratory

1.0 Purpose

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

2.0 Scope

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation /anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container.

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label.) Affix the labels to the jars.

5.0 Sampling Procedure

5.1. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination.

5.2. Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil.

5.3. Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.

5.4. Place the sample directly on ice for transport to the laboratory if required.

5.5. Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

a. Project and sample name.
b. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
c. Results of the requested analyses
d. Test Methods employed
e. Quality Control methods and results

Rice Operating Company

QUALITY PROCEDURE

Sampling and Testing Protocol Chloride Titration Using .282 Normal Silver Nitrate Solution

1.0 Purpose

This procedure is to be used to determine the concentration of chloride in soil.

2.0 Scope

This procedure is to be used as the standard field measurement for soil chloride concentrations.

3.0 Sample Collection and Preparation

3.1 Collect at least 80 grams of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample for soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.2 The soil sample(s) shall be immediately inserted into a one-quart or larger polyethylene freezer bag. Care should be taken to insure that no cross-contamination occurs between the soil sample and the collection tools or sample processing equipment.

3.3 The sealed sample bag should be massaged to break up any clods.

4.0 Sample Preparation

4.1 Tare a clean glass vial having a minimum 40 ml capacity. Add at least 10 grams of the soil sample and record the weight.

4.2 Add at least 10 grams of reverse osmosis water to the soil sample and shake for 20 seconds.

4.3 Allow the sample to set for a period of 5 minutes or until the separation of soil and water.

4.4 Carefully pour the free liquid extract from the sample through a paper filter into a clean plastic cup if necessary.

5.0 Titration Procedure

5.1 Using a graduated pipette, remove 10 ml extract and dispense into a clean plastic cup.

5.2 Add 2-3 drops potassium chromate (K_2CrO_4) to mixture.

5.3 If the sample contains any sulfides (hydrogen or iron sulfides are common to oilfield soil samples) add 2-3 drops of hydrogen peroxide (H_2O_2) to mixture.

5.4 Using a 1 ml pipette, carefully add .282 normal silver nitrate (one drop at a time) to the sample while constantly agitating it. Stop adding silver nitrate when the solution begins to change from yellow to red. Be consistent with endpoint recognition.

5.5 Record the ml of silver nitrate used.

6.0 Calculation

To obtain the chloride concentration, insert measured data into the following formula:

$$\frac{.282 \times 35{,}450 \times \text{ml } AgNO_3}{\text{ml water extract}} \times \frac{\text{grams of water in mixture}}{\text{grams of soil in mixture}}$$

Using Step 5.0, determine the chloride concentration of the RO water used to mix with the soil sample. Record this concentration and subtract it from the formula results to find the net chloride in the soil sample.

Record all results on the delineation form.

Rice Operating Company

QUALITY PROCEDURE

Procedure for Developing Cased Water Monitoring Wells

1.0 Purpose

This procedure outlines the methods to be employed to develop cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Sample Collection and Preparation

3.1 Prior to development, the static water level and height of the water column within the well casing will be measured with the use of an electric D.C. probe or a steel engineer's tape and water sensitive paste.

3.2 All measurements will be recorded within a field log notebook.

3.3 All equipment used to measure the static water level will be decontaminated after each use by means of Liquinox, a phosphate free laboratory detergent, and water to reduce the possibility of cross-contamination. The volume of water in each well casing will be calculated.

4.0 Purging

4.1 Wells will be purged by using a 2" decontaminated submersible pump or dedicated one liter Teflon bailer. Wells should be purged until the pH and conductivity are stabilized and the turbidity has been reduced to the greatest extent possible.

4.2 If a submersible is used the pump will be decontaminated prior to use by scrubbing the outside surface of tubing and wiring with a Liquinox water mixture, pumping a Liquinox-water mixture through the pump, and a final flush with fresh water.

5.0 Water Disposal

5.1 All purge and decontamination water will be temporarily stored within a portable tank to be later disposed of in an appropriate manner.

6.0 Records

6.1 Rice Operating Company will record the amount of water removed from the well during development procedures. The purge volume will be reported to the appropriate regulatory authority when filing the closure report.

Rice Operating Company

Quality Procedure

Procedure for Obtaining Water Samples (Cased Wells) Using One Liter Bailer

1.0 Purpose

This procedure outlines the methods to be employed in obtaining water samples from cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the water. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 The following table shall be used to select the appropriate sampling container, preservative method and holding times for the various elements and compounds to be analyzed.

Compound to be Analyzed	Sample Container Size	Sample Container Description	Cap Requirements	Preservative	Maximum Hold Time
BTEX	40 ml	VOA Container	Teflon Lined	HCl	7 days
TPH	1 liter	clear glass	Teflon Lined	HCl	28 days
PAH	1 liter	amber glass	Teflon Lined	Ice	7 days
Cation/Anion	1 liter	clear glass	Teflon Lined	None	48 Hrs
Metals	1 liter	HD polyethylene	Any Plastic	Ice/HNO_3	28 Days
TDS	300 ml	clear glass	Any Plastic	Ice	7 Days

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the well identification and the individual tests to be performed at that location. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Bailing Procedure

5.1 Identify the well from the sites schematics. Place pre-labeled jar(s) next to the well. Remove the plastic cap from the well bore by first lifting the metal lever and then unscrewing the entire assembly.

5.2 Using a dedicated one liter Teflon bailer, purge a minimum of three well volumes. Place the water in storage container for transport to a ROC disposal facility.

5.3 Take care to insure that the bailing device and string do not become cross-contaminated. A clean pair of rubber gloves should be used when handling either the retrieval string or bailer. The retrieval string should not be allowed to come into contact with the ground.

6.0 Sampling Procedure

6.1 Once the well has been bailed in accordance with 5.2 of this procedure, a sample may be decanted into the appropriate sample collection jar directly from the bailer. The collection jar should be filled to the brim. Once the jar is sealed, turn the jar over to detect any bubbles that may be present. Add additional water to remove all bubbles from the sample container.

6.2 Note the time of collection on the sample jar with a fine Sharpie.

6.3 Place the sample directly on ice for transport to the laboratory. The preceding table shows the maximum hold times between collection and testing for the various analyses.

6.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

7.0 Documentation

7.1 The testing laboratory shall provide the following minimum information:

A. Project and sample name.
B. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

Calculation for Determining the Minimum Bailing Volume for Monitor Wells
Formula $V = (\pi r^2 h)$
2" well [V/231=gal] X 3 = Purge Volume

V=Volume
π=pi
r=inside radius of the well bore
h=maximum height of well bore in water table

Example:

π	r^2	h(in)	V(cu.in)	V(gal)	X 3 Volumes	Actual
3.1416	1	180	565.488	2.448	7.34 gal	>10 gal

ANALYTICAL REPORT

Prepared for:

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project: Rice

M-9

PO#:

Order#: G0204401

Report Date: 09/04/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204401
Project:
Project Name: Rice
Location: M-9 EME

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0204401-01	Bottom Composite @20'	SOIL	8/28/02 15:00	8/29/02 16:30	4 oz Glass	Ice

Lab Testing: **Rejected:** No **Temp:** 0.5C

8015M
8021B/5030 BTEX
Chloride

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204401
Project:
Project Name: Rice
Location: M-9 EME

Lab ID: 0204401-01
Sample ID: Bottom Composite @20'

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		8/30/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	**<10.0**	10.0
DRO, >C12-C35	**<10.0**	10.0
TOTAL, C6-C35	**<10.0**	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003022-02		9/1/02 9:30	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	**<0.025**	0.025
Ethylbenzene	**<0.025**	0.025
Toluene	**<0.025**	0.025
p/m-Xylene	**<0.025**	0.025
o-Xylene	**<0.025**	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	106%	80	120
Bromofluorobenzene	119%	80	120

Approval: Celey D. Keene 9/5/02
Date

Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON		Order#:	G0204401
RE ENVIRONMENTAL		Project:	
P.O. BOX 13418		Project Name:	Rice
ODESSA, TX 79768		Location:	M-9 EME

Lab ID: 0204401-01
Sample ID: Bottom Composite @20'

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	94.5	mg/kg	1	20	9253	9/4/02	SB

Approval: Celey D. Keene 9/5/02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS I, LTD. 12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204401

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0003018-02			<10.0		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0204400-04	198	952	1124	97.3%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0204400-04	198	952	1144	99.4%	1.8%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003018-05		1000	1030	103.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204401

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0003022-02			<0.025		
Ethylbenzene-mg/kg	0003022-02			<0.025		
Toluene-mg/kg	0003022-02			<0.025		
p/m-Xylene-mg/kg	0003022-02			<0.025		
o-Xylene-mg/kg	0003022-02			<0.025		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204388-07	0	0.1	0.089	89.%	
Ethylbenzene-mg/kg	0204388-07	0	0.1	0.090	90.%	
Toluene-mg/kg	0204388-07	0	0.1	0.091	91.%	
p/m-Xylene-mg/kg	0204388-07	0	0.2	0.188	94.%	
o-Xylene-mg/kg	0204388-07	0	0.1	0.091	91.%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204388-07	0	0.1	0.094	94.%	5.5%
Ethylbenzene-mg/kg	0204388-07	0	0.1	0.095	95.%	5.4%
Toluene-mg/kg	0204388-07	0	0.1	0.097	97.%	6.4%
p/m-Xylene-mg/kg	0204388-07	0	0.2	0.198	99.%	5.2%
o-Xylene-mg/kg	0204388-07	0	0.1	0.095	95.%	4.3%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0003022-05		0.1	0.096	96.%	
Ethylbenzene-mg/kg	0003022-05		0.1	0.097	97.%	
Toluene-mg/kg	0003022-05		0.1	0.098	98.%	
p/m-Xylene-mg/kg	0003022-05		0.2	0.201	100.5%	
o-Xylene-mg/kg	0003022-05		0.1	0.097	97.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204401

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0003049-01			<20.0		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204401-01	94.5	667	756	99.2%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204401-01	94.5	667	744	97.4%	1.6%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0003049-04		5000	4960	99.2%	

Environmental Lab of Texas I, Ltd.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Donnie Anderson
Company Name: RE Environmental
Company Address:
City/State/Zip:
Telephone No: Fax No:
Sampler Signature:

Project Name: Rice
Project #:
Project Loc: M-9 EME
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TCLP: TPH: 418.1 / 6015M / 1005 / 1006	TOTAL: Cations (Ca, Mg, Na, K)	Anions (Cl, SO_4, CO_3, HCO_3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	Total Gamma				RUSH TAT (Pre-Schedule)	Standard TAT
0204401-01	Bottom Composite @20'	8-28-02	3:00P	1	X									X		X		X					X								X

Special Instructions
Fax Results to Donnie Anderson

Relinquished by:	Date	Time	Received by:	Date	Time
	8-29-02	4:30P			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Roy B Worley	8-29-02	16:30

Sample Containers Intact? Y N
Temperature Upon Receipt: 0.5°C
Laboratory Comments: 4.02.9/855

ANALYTICAL REPORT

Prepared for:

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project:	Rice
PO#:	
Order#:	G0204422
Report Date:	09/06/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204422
Project:
Project Name: Rice
Location: M-9

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0204422-01	5 pt. Wall Comp. @ 13'	SOIL	8/30/02 15:00	9/3/02 11:30	4 oz glass	Ice
	Lab Testing:	**Rejected:** No		**Temp:** 16.5 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
0204422-02	4 pt. Bottom Comp. @ 16'	SOIL	8/30/02 15:00	9/3/02 11:30	4 oz glass	Ice
	Lab Testing:	**Rejected:** No		**Temp:** 16.5 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204422
Project:
Project Name: Rice
Location: M-9

Lab ID: 0204422-01
Sample ID: 5 pt. Wall Comp. @ 13'

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		9/3/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	**<10.0**	10.0
DRO, >C12-C35	**<10.0**	10.0
TOTAL, C6-C35	**<10.0**	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003053-02		9/5/02 13:19	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	**<0.025**	0.025
Ethylbenzene	**<0.025**	0.025
Toluene	**<0.025**	0.025
p/m-Xylene	**<0.025**	0.025
o-Xylene	**<0.025**	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	**114%**	**80**	**120**
Bromofluorobenzene	**115%**	**80**	**120**

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204422
Project:
Project Name: Rice
Location: M-9

Lab ID: 0204422-02
Sample ID: 4 pt. Bottom Comp. @ 16'

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		9/3/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	**<10.0**	10.0
DRO, >C12-C35	**50.3**	10.0
TOTAL, C6-C35	**50.3**	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003053-02		9/5/02 14:25	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	**<0.025**	0.025
Ethylbenzene	**<0.025**	0.025
Toluene	**<0.025**	0.025
p/m-Xylene	**<0.025**	0.025
o-Xylene	**<0.025**	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	**108%**	**80**	**120**
Bromofluorobenzene	**113%**	**80**	**120**

Approval: Raland K Tuttle 9-06-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON		Order#:	G0204422
RE ENVIRONMENTAL		Project:	
P.O. BOX 13418		Project Name:	Rice
ODESSA, TX 79768		Location:	M-9

Lab ID: 0204422-01
Sample ID: 5 pt. Wall Comp. @ 13'

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	245	mg/kg	1	20	9253	9/4/02	SB

Lab ID: 0204422-02
Sample ID: 4 pt. Bottom Comp. @ 16'

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	354	mg/kg	1	20	9253	9/4/02	SB

Approval: Raland K Tuttle 9-06-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204422

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0003048-02			<10.0		
CONTROL SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003048-03		952	1003	105.4%	
CONTROL DUP SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003048-04		952	992	104.2%	1.1%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003048-05		1000	1040	104.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204422

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0003053-02			<0.025		
Ethylbenzene-mg/kg	0003053-02			<0.025		
Toluene-mg/kg	0003053-02			<0.025		
p/m-Xylene-mg/kg	0003053-02			<0.025		
o-Xylene-mg/kg	0003053-02			<0.025		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204422-01	0	0.1	0.093	93.%	
Ethylbenzene-mg/kg	0204422-01	0	0.1	0.095	95.%	
Toluene-mg/kg	0204422-01	0	0.1	0.095	95.%	
p/m-Xylene-mg/kg	0204422-01	0	0.2	0.196	98.%	
o-Xylene-mg/kg	0204422-01	0	0.1	0.095	95.%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204422-01	0	0.1	0.094	94.%	1.1%
Ethylbenzene-mg/kg	0204422-01	0	0.1	0.096	96.%	1.%
Toluene-mg/kg	0204422-01	0	0.1	0.096	96.%	1.%
p/m-Xylene-mg/kg	0204422-01	0	0.2	0.198	99.%	1.%
o-Xylene-mg/kg	0204422-01	0	0.1	0.096	96.%	1.%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0003053-05		0.1	0.105	105.%	
Ethylbenzene-mg/kg	0003053-05		0.1	0.105	105.%	
Toluene-mg/kg	0003053-05		0.1	0.108	108.%	
p/m-Xylene-mg/kg	0003053-05		0.2	0.215	107.5%	
o-Xylene-mg/kg	0003053-05		0.1	0.104	104.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204422

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0003050-01			<20.0		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204410-15	5320	5000	10300	99.6%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204410-15	5320	5000	10200	97.6%	1.%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0003050-04		5000	4960	99.2%	

Environmental Lab of Texas I, Ltd.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Ronnie Anderson
Company Name: RE Environmental
Company Address:
City/State/Zip:
Telephone No: Fax No:
Sampler Signature:

Project Name: Rice
Project #:
Project Loc: M-9
PO #:

LAB # (lab use only) 020422	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TCLP: TPH: 418.1 / 8015M / 1005 / 1006	Calions (Ca, Mg, Na, K)	Anions (Cl, SO_4, CO_3, HCO_3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	Total Gamma	RUSH TAT (Pre-Schedule)	Standard TAT
01	5pt. Wall Comp. @ 13'	8-30-02	3:00 P	1	X									X		X		X					X					
02	4pt. Bottom Comp. @ 16'	8-30-02	3:00 P	1	X									X		X		X					X					

Special Instructions
Fax Results to Donnie Anderson

Relinquished by:	Date	Time	Received by:	Date	Time
	9-3-02	11:30A			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Jeanne McMurrey	9-3-02	1130

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 16.5°C
Laboratory Comments:

ANALYTICAL REPORT

Prepared for:

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project:	Rice
PO#:	
Order#:	G0204403
Report Date:	09/04/2002

M-9

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204403
Project:
Project Name: Rice
Location: M-9

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0204403-01	Remediated Comp. 8 pt.	SOIL	8/29/02 15:00	8/30/02 8:00	4 oz glass	Ice
	Lab Testing:	**Rejected:** No		**Temp:** 20.5 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					
0204403-03	3 pt. Comp. Around Injection Well @ 13'	SOIL	8/29/02 15:00	8/30/02 8:00	4 oz glass	Ice
	Lab Testing:	**Rejected:** No		**Temp:** 20.5 C		
	8015M					
	8021B/5030 BTEX					
	Chloride					

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204403
Project:
Project Name: Rice
Location: M-9

Lab ID: 0204403-01
Sample ID: Remediated Comp. 8 pt.

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		8/30/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	**12.2**	10.0
DRO, >C12-C35	**147**	10.0
TOTAL, C6-C35	**159**	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003022-02		9/1/02 9:57	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	**<0.025**	0.025
Ethylbenzene	**<0.025**	0.025
Toluene	**<0.025**	0.025
p/m-Xylene	**<0.025**	0.025
o-Xylene	**<0.025**	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	**104%**	**80**	**120**
Bromofluorobenzene	**112%**	**80**	**120**

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204403
Project:
Project Name: Rice
Location: M-9

Lab ID: 0204403-03
Sample ID: 3 pt. Comp. Around Injection Well @ 13'

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		8/30/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	**39.8**	10.0
DRO, >C12-C35	**322**	10.0
TOTAL, C6-C35	**362**	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003022-02		9/1/02 10:19	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	**<0.025**	0.025
Ethylbenzene	**<0.025**	0.025
Toluene	**<0.025**	0.025
p/m-Xylene	**0.058**	0.025
o-Xylene	**<0.025**	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	**102%**	**80**	**120**
Bromofluorobenzene	**124%**	**80**	**120**

Approval: Celey D. Keene 9/5/02
Date

Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

LOGAN ANDERSON		Order#:	G0204403
RE ENVIRONMENTAL		Project:	
P.O. BOX 13418		Project Name:	Rice
ODESSA, TX 79768		Location:	M-9

Lab ID: 0204403-01
Sample ID: Remediated Comp. 8 pt.

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	354	mg/kg	1	20	9253	9/4/02	SB

Lab ID: 0204403-03
Sample ID: 3 pt. Comp. Around Injection Well @ 13'

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	425	mg/kg	1	20	9253	9/4/02	SB

Approval: Celey D. Keene 9/5/02
Date

Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS I, LTD. 12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204403

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0003030-02			<10.0		
CONTROL SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003030-03		952	1060	111.3%	
CONTROL DUP SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003030-04		952	1060	111.3%	0.%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003030-05		1000	1120	112.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204403

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0003022-02			<0.025		
Ethylbenzene-mg/kg	0003022-02			<0.025		
Toluene-mg/kg	0003022-02			<0.025		
p/m-Xylene-mg/kg	0003022-02			<0.025		
o-Xylene-mg/kg	0003022-02			<0.025		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204388-07	0	0.1	0.089	89.%	
Ethylbenzene-mg/kg	0204388-07	0	0.1	0.090	90.%	
Toluene-mg/kg	0204388-07	0	0.1	0.091	91.%	
p/m-Xylene-mg/kg	0204388-07	0	0.2	0.188	94.%	
o-Xylene-mg/kg	0204388-07	0	0.1	0.091	91.%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204388-07	0	0.1	0.094	94.%	5.5%
Ethylbenzene-mg/kg	0204388-07	0	0.1	0.095	95.%	5.4%
Toluene-mg/kg	0204388-07	0	0.1	0.097	97.%	6.4%
p/m-Xylene-mg/kg	0204388-07	0	0.2	0.198	99.%	5.2%
o-Xylene-mg/kg	0204388-07	0	0.1	0.095	95.%	4.3%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0003022-05		0.1	0.096	96.%	
Ethylbenzene-mg/kg	0003022-05		0.1	0.097	97.%	
Toluene-mg/kg	0003022-05		0.1	0.098	98.%	
p/m-Xylene-mg/kg	0003022-05		0.2	0.201	100.5%	
o-Xylene-mg/kg	0003022-05		0.1	0.097	97.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204403

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0003049-01			<20.0		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204401-01	94.5	667	756	99.2%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204401-01	94.5	667	744	97.4%	1.6%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0003049-04		5000	4960	99.2%	

Environmental Lab of Texas I, Ltd.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Donnie Anderson
Company Name: KE Environmental
Company Address:
City/State/Zip:
Telephone No: Fax No:
Sampler Signature:

Project Name: Rice
Project #:
Project Loc: M-9
PO #:

0204403

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TCLP: TPH: 418.1 (8015M) 1005 1006	TOTAL: Cations (Ca, Mg, Na, K)	Anions (Cl, SO_4, CO_3, HCO_3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	Total Gamma			RUSH TAT (Pre-Schedule)	Standard TAT
01	Remediated Comp. 8pt.	8-29-02	3:00P	1	X									X		X		X					X							
02	~~5pt. wall~~ Comp. @ 13'	8-29-02	3:00P	1	X									X		X		X					X							
03	3pt. Comp. around Injection Well @ 13'	8-29-02	3:00P	1	X									X		X		X					X							

DO NOT ANALYZE

Special Instructions
Fax Results to Donnie Anderson

Relinquished by:	Date	Time	Received by:	Date	Time
	8-30-02	8:00 A.			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Jeanne McMurray	8-30-02	0800

Sample Containers Intact? (Y) N
Temperature Upon Receipt:
Laboratory Comments: 20.5°C
* Do not analyze 5pt wall as per Derek 8/30/02 @ 1025

ANALYTICAL REPORT

Prepared for:

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project: M-9

PO#:

Order#: G0204446

Report Date: 09/10/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204446
Project: M-9
Project Name: M-9
Location:

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0204446-01	5 pt Comp 3rd Lift @6'	SOIL	9/5/02 16:30	9/6/02 8:40	Bottle	n/a

Lab Testing:
8015M
8021B/5030 BTEX
Chloride

Rejected: No **Temp:** 21.0 C

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204446
Project: M-9
Project Name: M-9
Location:

Lab ID: 0204446-01
Sample ID: 5 pt Comp 3rd Lift @6'

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		9/6/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	**15.5**	10.0
DRO, >C12-C35	**161**	10.0
TOTAL, C6-C35	**177**	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003097-02		9/9/02 19:55	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	**<0.025**	0.025
Ethylbenzene	**<0.025**	0.025
Toluene	**<0.025**	0.025
p/m-Xylene	**<0.025**	0.025
o-Xylene	**<0.025**	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	**110%**	**80**	**120**
Bromofluorobenzene	**107%**	**80**	**120**

Approval: Raland K Tuttle 9-10-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON		Order#:	G0204446
RE ENVIRONMENTAL		Project:	M-9
P.O. BOX 13418		Project Name:	M-9
ODESSA, TX 79768		Location:	

Lab ID: 0204446-01
Sample ID: 5 pt Comp 3rd Lift @6'

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	319	mg/kg	1	20	9253	9/6/02	SB

Approval: Raland K Tuttle 9-10-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS I, LTD. 12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204446

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0003091-02			<10.0		
CONTROL SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003091-03		952	859	90.2%	
CONTROL DUP SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003091-04		952	847	89.%	1.4%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
TOTAL, C6-C35-mg/kg	0003091-05		1000	849	84.9%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204446

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0003097-02			<0.025		
Ethylbenzene-mg/kg	0003097-02			<0.025		
Toluene-mg/kg	0003097-02			<0.025		
p/m-Xylene-mg/kg	0003097-02			<0.025		
o-Xylene-mg/kg	0003097-02			<0.025		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204447-06	0	0.1	0.090	90.%	
Ethylbenzene-mg/kg	0204447-06	0	0.1	0.092	92.%	
Toluene-mg/kg	0204447-06	0	0.1	0.093	93.%	
p/m-Xylene-mg/kg	0204447-06	0	0.2	0.190	95.%	
o-Xylene-mg/kg	0204447-06	0	0.1	0.092	92.%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0204447-06	0	0.1	0.087	87.%	3.4%
Ethylbenzene-mg/kg	0204447-06	0	0.1	0.089	89.%	3.3%
Toluene-mg/kg	0204447-06	0	0.1	0.089	89.%	4.4%
p/m-Xylene-mg/kg	0204447-06	0	0.2	0.184	92.%	3.2%
o-Xylene-mg/kg	0204447-06	0	0.1	0.089	89.%	3.3%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Benzene-mg/kg	0003097-05		0.1	0.088	88.%	
Ethylbenzene-mg/kg	0003097-05		0.1	0.089	89.%	
Toluene-mg/kg	0003097-05		0.1	0.090	90.%	
p/m-Xylene-mg/kg	0003097-05		0.2	0.184	92.%	
o-Xylene-mg/kg	0003097-05		0.1	0.089	89.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204446

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0003072-01			<20.0		
MS SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204435-01	1670	1345	2660	73.6%	
MSD SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0204435-01	1670	1345	2640	72.1%	0.8%
SRM SOIL	**LAB-ID #**	**Sample Concentr.**	**Spike Concentr.**	**QC Test Result**	**Pct (%) Recovery**	**RPD**
Chloride-mg/kg	0003072-04		5000	4960	99.2%	

Environmental Lab of Texas I, Ltd.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Deric Robinson
Company Name: RE environmental
Company Address:
City/State/Zip:
Telephone No:
Fax No:
Sampler Signature:

Project Name: M-9
Project #:
Project Loc:
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: / TOTAL: TPH: 418.1 / 8015M / 1005 / 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	Total Gamma	Chloride		RUSH TAT (Pre-Schedule)	Standard TAT
0204446-01	5pt comp 3rd lift @ 6'	9-5-02	1630		✓									✓		✓							✓				✓			

Special Instructions

Sample Containers Intact? Y N
Temperature Upon Receipt:
Laboratory Comments:
Ice 21°C

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				9-06-02	0840

M-9

ANALYTICAL REPORT

Prepared for:

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Project: Rice

PO#:

Order#: G0204511

Report Date: 09/19/2002

Certificates
US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768
366-0804

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

Lab ID:	Sample :	Matrix:	Date / Time Collected	Date / Time Received	Container	Preservative
0204511-01	M-9 Last Remed. Comp.	SOIL	9/12/02	9/13/02 8:20	4 oz glass	Ice
	Lab Testing: 8015M 8021B/5030 BTEX Chloride	Rejected: No		Temp: 18.0 C		
0204511-02	O-17-2 Bottom Comp.	SOIL	9/12/02	9/13/02 8:20	4 oz glass	Ice
	Lab Testing: 8015M 8021B/5030 BTEX Chloride	Rejected: No		Temp: 18.0 C		
0204511-03	O-17-2Wall Comp.	SOIL	9/12/02	9/13/02 8:20	4 oz glass	Ice
	Lab Testing: 8015M 8021B/5030 BTEX Chloride	Rejected: No		Temp: 18.0 C		

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-01
Sample ID: M-9 Last Remed. Comp.

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		9/14/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	18.1	10.0
DRO, >C12-C35	400	10.0
TOTAL, C6-C35	418	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003176-02		9/18/02 16:50	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	92%	80	120
Bromofluorobenzene	96%	80	120

BL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-02
Sample ID: O-17-2 Bottom Comp.

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		9/14/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003176-02		9/18/02 17:12	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	83%	80	120
Bromefluorobenzene	85%	80	120

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-03
Sample ID: O-17-2Wall Comp.

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		9/14/02	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	15.4	10.0
TOTAL, C6-C35	15.4	10.0

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0003176-02		9/18/02 18:12	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	102%	80	120
Bromofluorobenzene	96%	80	120

Approval: Raland K Tuttle 9-20-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

DL = Diluted out N/A = Not Applicable RL = Reporting Limit

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
RE ENVIRONMENTAL
P.O. BOX 13418
ODESSA, TX 79768

Order#: G0204511
Project:
Project Name: Rice
Location: None Given

Lab ID: 0204511-01
Sample ID: M-9 Last Remed. Comp.

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	390	mg/kg	1	20	9253	9/13/02	SB

Lab ID: 0204511-02
Sample ID: O-17-2 Bottom Comp.

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	922	mg/kg	1	20	9253	9/13/02	SB

Lab ID: 0204511-03
Sample ID: O-17-2Wall Comp.

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Analyzed	Analyst
Chloride	975	mg/kg	1	20	9253	9/13/02	SB

Approval: Raland K Tuttle 9-20-02
Raland K. Tuttle, Lab Director, QA Officer — Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

RL = Reporting Limit N/A = Not Applicable

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0204511

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0003156-02			<10.0		
MS SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0204502-08	0	952	1080	113.4%	
MSD SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0204502-08	0	952	1140	119.7%	5.4%
SRM SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg	0003156-05		1000	1190	119.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0204511

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0003176-02			<0.025		
Ethylbenzene-mg/kg	0003176-02			<0.025		
Toluene-mg/kg	0003176-02			<0.025		
p/m-Xylene-mg/kg	0003176-02			<0.025		
o-Xylene-mg/kg	0003176-02			<0.025		
MS SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0204517-03	0	0.1	0.103	103.%	
Ethylbenzene-mg/kg	0204517-03	0	0.1	0.108	108.%	
Toluene-mg/kg	0204517-03	0	0.1	0.107	107.%	
p/m-Xylene-mg/kg	0204517-03	0	0.2	0.224	112.%	
o-Xylene-mg/kg	0204517-03	0	0.1	0.105	105.%	
MSD SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0204517-03	0	0.1	0.105	105.%	1.9%
Ethylbenzene-mg/kg	0204517-03	0	0.1	0.111	111.%	2.7%
Toluene-mg/kg	0204517-03	0	0.1	0.110	110.%	2.8%
p/m-Xylene-mg/kg	0204517-03	0	0.2	0.225	112.5%	0.4%
o-Xylene-mg/kg	0204517-03	0	0.1	0.109	109.%	3.7%
SRM SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg	0003176-05		0.1	0.102	102.%	
Ethylbenzene-mg/kg	0003176-05		0.1	0.105	105.%	
Toluene-mg/kg	0003176-05		0.1	0.107	107.%	
p/m-Xylene-mg/kg	0003176-05		0.2	0.219	109.5%	
o-Xylene-mg/kg	0003176-05		0.1	0.104	104.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0204511

BLANK SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0003136-01			<20.0		
MS SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0204511-02	922	1000	1914	99.2%	
MSD SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0204511-02	922	1000	1932	101.%	0.9%
SRM SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg	0003136-04		5000	4960	99.2%	

Environmental Lab of Texas I, Ltd.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Decie Robinson

Company Name: RE environmental

Company Address:

City/State/Zip:

Telephone No:

Fax No:

Sampler Signature:

Project Name: RICE

Project #:

Project Loc:

PO #:

0204511

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice (4 oz glass)	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TPH: 418.1 (8015M) 1005 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, ~~SO4, CO3, HCO3~~)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	Total Gamma	RUSH TAT (Pre-Schedule)	Standard TAT
01	M-9 last Remed comp	9-12-02		1	✓									✓		✓		✓					✓					
02	O-17-2 Bottom comp	9-12-02		1	✓									✓		✓		✓					✓					
03	~~[illegible]~~ O-17-3 Wall comp	9-12-02		1	✓									✓		✓		✓					✓					

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	9-13-02	0820			
Relinquished by:	**Date**	**Time**	**Received by ELOT:**	**Date**	**Time**
			Jeanne McMurrey	9-13-02	0820

Sample Containers Intact? (Y) N

Temperature Upon Receipt: 18°C

Laboratory Comments: